

Flight, September 3, 1910.

FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

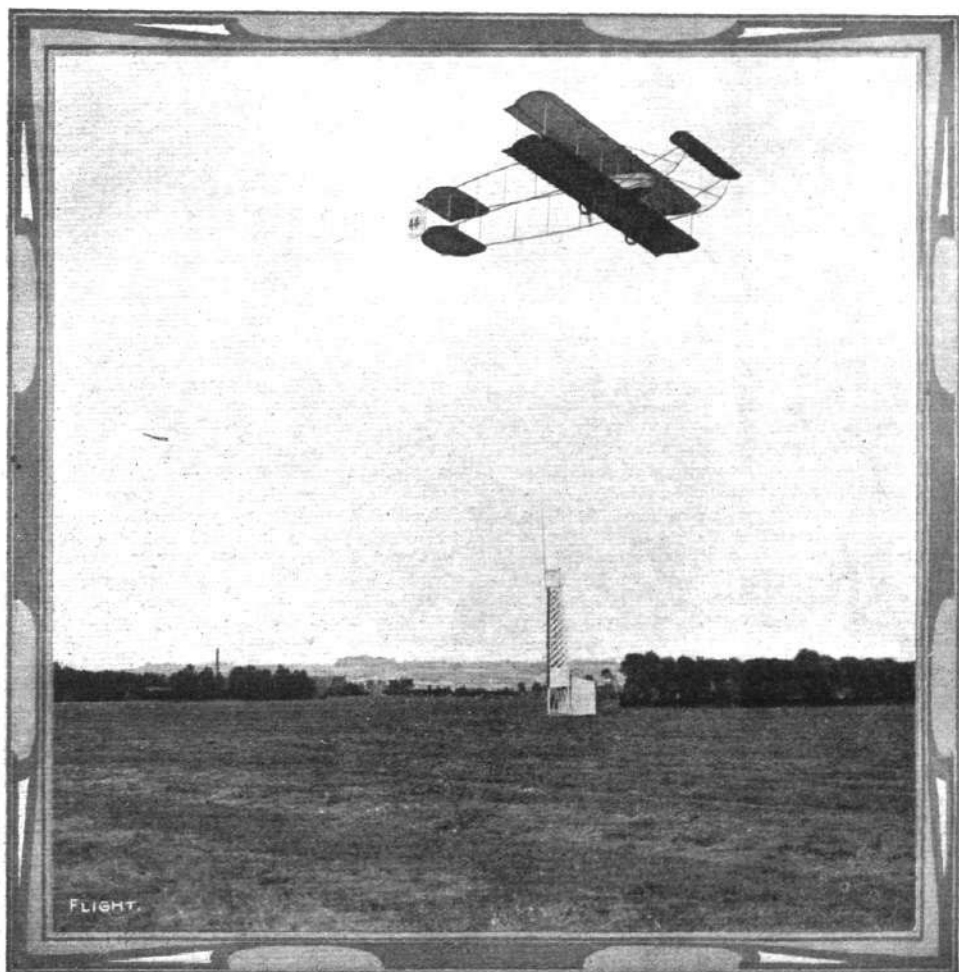
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AT THE HAVRE FLIGHT MEETING.—Barra, on his Maurice Farman, circling the aerodrome. In the distance, on the left, is seen a Blériot in flight.

A BLUE-BOOK ON AERONAUTICS.

THE first report of the Advisory Committee for Aeronautics, covering the year 1909-1910, has been presented to both Houses of Parliament and issued in the usual way as a Blue-book. Anyone is entitled to purchase this 191 page volume for the price of 8s. 5d., and presumably those whose business it is to study the subject in order to maintain their close association with the movement will buy the publication as a matter of course.

When they have got it they will find that it will take some reading, and far more digesting, to obtain what may be described as any workable data from its contents. It is a very theoretical book, and we doubt if it has any appreciable value to the cursory student of flight. On the other hand, it is an admirable beginning, and we do not see how anyone could possibly want a better earnest of the sort of information that it is hoped the Government Flight Office will in due course regularly provide.

So far, they have hardly had time to do more than get their apparatus into working order, for it is a very big undertaking to erect any satisfactory testing plant, even though in appearance it may be of the simplest possible description. All sorts of precautions have to be taken to guard against extraneous causes and effects that would neutralise the value of the information that the apparatus is designed to provide. Even such an apparently simple object as a wind channel, wherein small planes and other shapes can be tested for lift and drift, offers endless opportunities for inaccuracy, and it is only when work of this character is undertaken by scientific minds thoroughly trained to experimental research that the data collected can be considered reliable. This aspect of the case is very often forgotten. Too many enthusiasts are apt to suppose that any sort of rough and ready arrangement will do to make tests with, but the truth of the matter is that tests of that character are generally worse than useless, for the information is the more misleading since it is supposed by those who accept it to have been proved in its accuracy.

There is no doubt that the National Physical Laboratory has an enormous potential capacity for doing good work in the furtherance of aeronautics, and if only there is maintained an active co-operation between all concerned there should be some possibility of getting really useful results without delay. It is quite important, for instance, that problems of current import should be attacked as soon as they are definitely recognised as barring the way to advance in any particular direction. Very properly the Government have had first call on the services of the Laboratory, and practically all the time that has so far been available for definite experiment has been directed towards certain questions associated with the development of airships. Very useful work has already been done in testing the rate of leakage or diffusion of hydrogen through different kinds of balloon fabrics, and the principal results are contained in an appendix to the report. Other tests have been carried out in order to ascertain the shapes of least resistance that are suited to dirigible envelopes, and also the best forms to use as rudders and elevating planes.

These latter constitute practically the only research work relating to the aeroplane that has yet been undertaken, but, inasmuch as the experimental surfaces were flat planes, they do not apply directly to the principal unsolved problems of the cambered plane that is used in the modern flying machine. So soon, however, as the work relating more particularly to airships has provided

the desired data, there is no doubt that the labours of the experimenters will be directed by the Advisory Committee towards investigations bearing upon the aeroplane. When these are undertaken, interest in this department of Government work will grow by leaps and bounds, for there are, figuratively speaking, a thousand people interested in the aeroplane for every one that is interested in the dirigible balloon. Private enterprise, with a few marked exceptions, is not attracted to the development of the airship, which is very commonly regarded to be an undertaking essentially within the sphere of Government activity. There is no doubt, however, that any practical advice that the Advisory Committee are able to offer in the future as the result of the research work in aerodynamics conducted by the Authorities at Bushey House will be received with eagerness by an enormous number of the British population, many of whom will doubtless at their own expense forthwith endeavour to put much of it into effect.

At the moment, the most that the Advisory Committee has been able to do has been to prepare a sort of *résumé* of the present state of the science, and this they have embodied in an appendix to the report that constitutes the greater part of the volume in question. Needless to say, a great number of very interesting and some very abstruse matters are thus referred to.

The description of the experimental equipment of the Aeronautical Department of the National Physical Laboratory, by Dr. T. E. Stanton, is itself one of the most important and by no means the least interesting of the contributions, and is very properly followed by a memorandum of the general questions to be studied by A. Mallock, F.R.S. Another report by Dr. T. E. Stanton on recent researches on the forces of plane surfaces in a current of air very ably reviews the present day knowledge on this fundamental aspect of the aeroplane, while a short memorandum on stability by Sir G. Greenhill, F.R.S., affords food for reflection that will take far longer than the time occupied to peruse the text. A note on skin-friction by F. W. Lanchester combines with a note as to the application of the principle of dynamical similarity by Lord Rayleigh, while A. Mallock, F.R.S., discusses the classic experiments of Froude. One of the most important contributions is that made by the Secretary of the Committee, Mr. F. J. Selby, who has prepared a summary of papers relating to the stability of airships and aeroplanes, and also a report as to existing knowledge on the subject of the accumulation of electrostatic charges on balloons. One of the most bulky, and also one of the most important of the appendices is the report on the wind by Dr. W. N. Shaw, F.R.S., which is accompanied by many interesting charts and diagrams. The work already undertaken by the National Physical Laboratory relating to the resistance of balloon bodies, the best forms for rudders, and the leakage of hydrogen, are all described in detail among the appended reports, which also contain references to engines and propellers. Of the former there is a very interesting translation presented by Rear-Admiral R. H. Bacon relating to the work done by the German Society for the Study of Airships; the memorandum on the screw-propeller is by Sir W. G. Greenhill. Flying fish and anemometers by A. Mallock are also included in this really extraordinary compendium of knowledge, which concludes with a very good collection of abstracts from foreign papers and articles.

FLIGHT PIONEERS.



MR. J. W. DUNNE.

WITH THE WRIGHTS IN AMERICA.

By GRIFFITH BREWER.

Apologia.

WHEN I accepted the hospitality of the Wright Bros., I had no idea of publishing the observations of a private visit, nor did I give any hint to them of such a possibility. It was only after waving farewell at Dayton Railway Station that the thought developed of giving to my fellow members of the Royal Aero Club some small idea of what is being done at Dayton, so that when the pioneers of flight have an opportunity to return to England, we in the Royal Aero Club may not have followed the general lead like a flock of sheep, and have shown by our actions and our talk in their absence, that out of sight from England means also out of mind. I therefore crave indulgence if the writing of this account is indiscreet, and I fear it must be so, because it was the only work that could be found for my hands to do on the voyage back on the "Baltic."

We are apt to forget in our desire to see flying general, that we owe everything to these two American scientists. If it had not been for their discarding the then accepted scientific data and starting at the beginning and building up their own tables and diagrams, they might still have been floundering in endless experiments together with others who have since been successful. It is no use deceiving ourselves into the belief that it was the introduction of the petrol engine that gave the Wrights the opportunity that was denied to others, because when they flew they carried sufficient margin of power to have flown with the power available twenty years earlier. In 1892 Maxim built a machine with sufficient power to fly, but all the modern petrol engines in the world would not be able to coax that machine to go up in the air to-day. I am as confident that we should not be flying to-day were it not for the Wrights as I am that the pneumatic tyre would still be unknown to the world were it not for Dunlop. I am also confident that if we can get these pioneers of aviation to spare us some of their attention, that the cause of flight in England will be considerably enhanced. It is therefore with a feeling of pleasant anticipation that we may look forward to a visit from our American friends towards the end of the present year.

The First Mechanical Flights.

I never thoroughly realised the absurdity of the so-called mystery of the early flights made by the brothers Wilbur and Orville Wright, until this August, when I visited the first flying field. I knew before that the field was surrounded by a fence, and this fence, with its suggestion of secrecy, naturally implied a high palisade such as we call fences in England. Instead, however, of the 6 ft. split-oak palisading to obstruct the view, I found nothing but a row of low posts, supporting four rows of wires, to keep the farmer and other wayfarers from looking their fill as they travelled down the main road between Springfield and Dayton, both towns of over 100,000 inhabitants. Moreover, if one main road bounding one side of the ground were not sufficient, then a cross-road bounding another side of the land afforded equal facilities; whilst three electric railway cars per hour also passed along the track adjoining the main road,

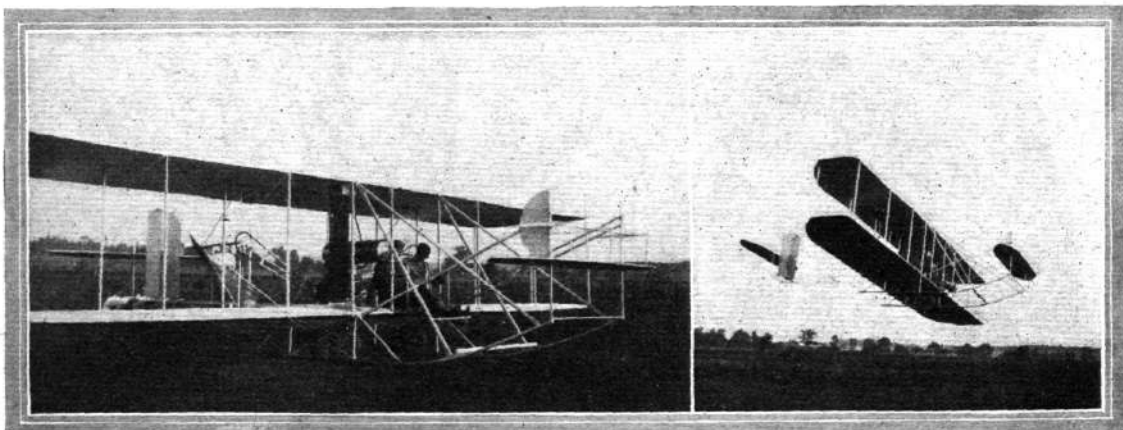
and allowed their fifty occupants to view the whole ground, and if sufficiently interested to alight at "Simms" station, which abuts directly on one corner of the land rented by the brothers for their early experiments in 1904, and now used by them to-day as a school for their pupils.

Newspapers have always been accustomed to receive voluminous copy from those experimenting with so-called flying machines, the necessity of giving a full report seeming to most experimenters to be of greater importance than the accomplishment of something to report on; so when the two quiet young men squabbled amongst themselves over the theories of flight during their leisure at home, and put their differences of opinion to the test outdoors in their vacation, it was natural for the newspapers to regard these holiday pranks of no serious importance. As it was in 1903 to 1906, so it is to-day. The work of building machines and testing alterations is proceeding in the same methodical manner as the development of a motor launch, and those genial brothers are getting as much fun out of it as Tom Thornycroft gets in making himself hot and dirty down on the "Enchantress."

Manufacturing Facilities.

I had expected to find the Wright Co. installed in an up-to-date factory adjoining the flying ground, and Wilbur and Orville Wright sleeping on beds up amongst the rafters of the shed, and cooking tasty meals between whites. Instead I found them living with their father and sister in the wooden house they had grown up in from the time when they were all children. The workshop where they make their engines is within a quarter of a mile, and is the same where six years ago they were turning out the Wright bicycles which hold their own to-day. Even closer to the house is the little printing works, where before making bicycles, they expended their unlimited energy and ingenuity not only in printing a newspaper, but in making the printing machine, which they constructed out of pieces of wood and bits of string. This Robinson Crusoe printing press was only designed for home use, for it invariably refused to go unless one of the brothers were looking on.

The factory where the flying machines are built is three miles away on the other side of the city, and there in a large airy ground floor building some six machines were in various stages of construction. One machine just on completion attracted my attention, as it enabled me to compare the tail used by the Wright Brothers in America with the tail fitted by Mr. Rolls to his French-built Wright machine just before his fatal accident. The differences in construction were very considerable, the American pattern being considerably stronger than the French pattern, whilst a clearance of 11 ins. between the propellers and the tail frame showed a considerable increase in the margin of safety compared with a 3 in. clearance on the French designed tail. The maximum working strain that can be brought on to the tail is less than 70 lbs., and this tail took the strain of Wilbur Wright's weight and my own, or over 250 lbs. dead weight on its outer end without bending more than an inch



Photos by Godshall.

WITH THE WRIGHT BROS.—Ready for a flight. On the right the Wright machine in the air is an instance of this biplane flying with one elevator and one "blinker."

out of line. The breaking of the tail-frame under wind pressure would, therefore, be impossible in the American-built machine, and although the French construction was weaker, it is extremely improbable that the tail on Mr. Roll's machine collapsed under wind pressure.

Mr. Roll's Accident.

The propellers probably fouled the frame of the tail and cut through the lower members, but how the frame approached sufficiently to take up the three inches clearance, whether by bending or disconnecting, will never be known. Although it is certain that the tail frame broke in the air, it is by no means certain that this was the cause of the main accident. The wind was blowing towards the grand stand, and would be rising in a wave over it, and in commencing the dive towards the target the machine would be running down at an angle in a rising current. Most of the weight of the machine is between the main planes, and when the machine entered the lower strata of air this would be travelling horizontally, and would catch the elevating front planes on their upper side, thus tending to still further increase the downward angle of travel, irrespective of the angle at which they might then be set. The inertia of the weight would, however, maintain the forward direction of the heaviest part, and assist the completion of the vertical movement. Rolls attempted a daring manoeuvre, just as a hundred times previously he had dared some feat in motoring or ballooning, but on this occasion the risk he took prevailed. The fact that the Wright Brothers neither designed nor authorised the tail fitted to Mr. Roll's machine does not therefore appear to be of much importance, because, no matter what machine had been flown and brought into that diving position in the wind wave before that grand stand, the result must have been the same.

Pupils Learning to Fly.

The flying ground used by the Wright Brothers is situated about eight miles west of the city of Dayton, at a small station called "Simms" on an electric car line between Dayton and Springfield. The cars, which are as large as Pullmans, leave the main street in Dayton on the ordinary city tram rails every half-hour, and in twenty minutes drop their crowd of aviators and spectators on the main road which runs alongside the rough weed-grown field. Every morning at breakfast the telephone used to ring, and the same answer suited all enquirers, "Well, you are as likely to see a flight to-day as any other day. The Wright Brothers don't know themselves whether there will be any flying," and this explanation was literally true. They never knew, any more than other inventors, what stage of the designing, testing, or experimenting they would reach that day. After the first day's visits to the factory and the workshop I generally remained at home, until Wilbur or Orville came running in to say they were going out to Simms on the next car. If the weather was fine, then we had to fight our way on to the car, Orville generally riding on the step because of the crowd going out to see the "airship proposition." Why will the man in the street muddle the airship with the aeroplane? He does not muddle a life-belt which enables him to float in the water with a pair of skates for gliding on the surface; but perhaps he did make this mistake when skates were first invented.

On arriving at Simms we cross a plank bridge over a ditch, pass through a little wicket gate and enter the back of the shed where two machines are standing. One is on skids and the other has auxiliary pairs of wheels attached to the skids. Mr. Coffyn is in charge of the school, and two other pupils, Messrs. Brookins and Johnstone, are tinkering with the machines preparatory to making trial flights. Both machines have adjustable tail planes attached, and one has had the two front planes removed and the "blinkers" have been nailed temporarily to the front framing. This frontless machine is the first to be taken out, and we pull it out on to the smoothest part of that rough ground, where weeds as stiff and high as young willows cover most of the land. Then the engine is started up, and before I know what is about to happen there is Orville riding up in the air on the machine without its bridle. "They'll be going up soon on the engine alone with half a propeller," remarks the man who hands back my cap across the fence where it has been blown by the wind from the propellers. After a short three minutes' flight Orville is down again to make some adjustments, and then in another seven minutes is up for a second trial. They have a simple home-made range-finder at Simms composed of a wooden

yard stick and a little metal slide on it having two pairs of prongs projecting from it at 1 in. and $\frac{1}{2}$ in. apart respectively. You point the stick and sight it at the machine as it flies overhead, and run the slide out until the prongs enclose the wings exactly. Knowing the wings to be about 40 ft. wide, and assuming the 1 in. prongs fit at 10 ins. distance down the stick, the height of the machine is approximately 400 ft. One of the first flights that I saw measured by Wilbur in this way gave Orville a height of 1,200 ft.

More Flights and "Stunts."

My second visit to Simms was a pupils' day, commencing with Brookins going up and doing "stunts" for my benefit. He turned many circles in less than ten seconds each, and the banking angle to which the machine was brought in these quick turns was 45° at the least. On expressing surprise at these quick evolutions, I am told that he has turned a complete circle in less than seven seconds, but has been instructed not to do so quick a turn again before the strains brought on to the machine, and which exceed twice the ordinary flying strain, have been accurately figured out. This Brookins is a promising kind of pupil, and holds the world's record for height, having flown under official observation 6,175 ft.* This was done early in July at Atlantic City when he won the £1,000 prize for beating all officially certified high flights. Brookins seemed too daring, and I told him that I for one would not care to experience the exhilaration of a flying trip with him. A new pupil is to be taken up for the first time, and Orville decides to take him instead of leaving him to Brookins. "I guess he was afraid I'd scare him too much for a first trip," says Brookins as they fly overhead, the novice squeezing the sap out of the upright, to use the parlance of the expert flyers of two months standing. It is well to notice here that Brookins, who had never seen a flying machine three or four months ago, has found no difficulty in mastering the "complicated Wright flyer" and capturing a world's record on it. Before I left ten days later, the novice, Parmalee, was using both levers, and told his instructor that he thought he had nearly got the hang of that "double-jointed lever." After this lesson Johnstone was sent up for a practice flight of an hour, sufficient petrol being put into the tank to cover the hour, but insufficient to tempt him to make a record for endurance. At the end of an hour and thirty-four minutes he came down with the petrol finished. The day terminated by Coffyn making two 20 minute flights, the second being terminated by signal, so that we might all catch the next tram home. This time I stood on the step and Wilbur and Orville got jammed somewhere in the vestibule. Brookins and Johnstone hung on to the buffer and cowcatcher outside, whilst the spectators sat it out comfortably on the seats.

And so the days flew by. Crammed full of interest from the time of eating the cantaloupes in the morning, to the sitting out on the verandah after dinner at night, when the brothers talked horse-

* Drexel at Lanark has since then bettered this.



Photo by Godshall.

WITH THE WRIGHT BROS.—Play between flying times. A trio of pupils—Messrs. Brookins (top), Coffyn (centre), and Johnstone. Note in the background the patient crowd, with its cars and vehicles, waiting behind the fence for the sight of a flight.

power and wind surfaces, while I watched the fire-flies and got in the way of the arguments as little as I could. And I don't think the pleasure was all on my side. All the Wright family seemed out for fun, and each member worked hard to get it. Even Bishop Wright at the age of 82 wants his share, and when Orville took his venerable father for a ride aloft, he had to mount to many hundred feet in compliance with his passenger's requests to go up higher. This enthusiasm also struck others, for the lighthouse keeper at Kitty Hawk said he had never seen men work so hard for fun before.

A Ride on the Wright Flyer.

Those who have been favoured with a ride with Wilbur or Orville have never had previous warning. The simple question, "Are you ready for a ride?" has now been put to several, and I have never yet heard of its being refused. At Le Mans, when Wilbur rewarded the "English bunch" for their enthusiastic patience, he took all four of us up one after the other, these Aero Club members all having instantly answered "Yes" to this welcome invitation. So when Orville put the same gratifying question to me at Simms I stifled my determination to keep out of the way so as to let them get on with their work, and took my place on the central seat next to the engine. This time we were to fly with one elevator plane detached, and with the right-hand blinker only. We also tried the experiment of running through the long weeds before the wind; but, although we succeeded in decorating the machine with green, and taking on board a cargo of grasshoppers, we made the first and only false start. My weight has gone up since my last trip, but it is still below that of one of my rival butterflies at Le Mans. A second attempt in the opposite direction was more successful, and we began to climb up steep stairs as we went round the field. Out of consideration for my novice feelings Orville refrained from anything in the way of "stunts," although he took the machine round some beautiful curves, and up to about 400 ft., where the air was delightfully warm as distinct from the damper air near the ground. Then we slowed the engine down to walking pace, and slid down an elastic slope to the level of the tree-tops, when we quickened up and ran through the weeds, collecting their tops on the skid-stays without the wheels or skids touching the ground. Perhaps they'll add a scissors attachment below the machine, and use it as a reaper later on.

A "Hole in the Air."

Up into the air again, waving a greeting in return from those at the shed, and later at the other end of the field we ran into the "hole in the air" that has been referred to by many aviators. M. Paulhan told me that in his flight to Manchester he encountered such a hole, and the machine fell some 30 ft. before recovering its airy support. My experience was mild compared to this. We were running quite smoothly when the seat seemed to give way, and it was quite an appreciable moment before I felt I could sit on anything solid. Looking to Orville on my left, I met his reassuring smile, and we went smoothly on to inspect neighbouring cornfields and cut a few eights as a fitting termination to a 23 minute flight. They say the particular spot where we had the "little drop" is in a corner of the field where it is quite usual to encounter similar whirls

or disturbances. The machine did not pitch or oscillate, but simply went down bodily about 2 ft.

More Pupils and Workshop Observations.

After my own flight, other flights seemed to me of less consequence, but they went on just the same. Each pupil did his "stunt," and each instructor reflected how green he must have been a month before when then only a pupil. The days when we did not go out to Simms brought in a report from Coffyn giving a list of flights by the various pupils, and the brothers went on in their leisurely, get-there way, designing, thinking, making and testing—not testing to find out, but testing to prove conclusions already arrived at. At the works one morning I noticed an engine running by itself and turning an arm giving similar resistance to a pair of propellers. This engine, which seemed to have been forgotten, was still running later in the afternoon when I went there again, so I enquired, and found that it had been started at 8 a.m., and with the exception of the lunch hour, it had been running all day without attention and would run like that till 5.30. Why do we have such engine troubles in Europe, and why can't we get our engines to run like they invariably do in America? Is it because the Americans have to work so much harder across the Atlantic, and that their engines out of sheer force of example do the same?

And so they go on day after day, gaining the love and respect of their pupils and all with whom they come in contact. Just as it was at Le Mans and Pau, where their influence was more far-reaching than in the cause of flight alone.

The Wright Patent Litigation.

Before closing, let me say a few words to explain the present situation of the Wright Patents. Both in America and England the Courts have power to issue an interim injunction restraining infringement of a patent, in which it is shown to the satisfaction of the Court that infringement is taking place and that damage will be incurred if the continued infringement is not restrained. It is, however, extremely rare that such a power is exercised before the hearing of the trial, when the witnesses are examined. The validity of the patent was not disputed, and the judge, after consideration of the documents in the case, decided that the infringement was so obvious that he granted the interim injunction. The defendant appealed, and filed additional documents, and the Wright Co. considering the new documents to be unimportant, did not apply to refer the new documents to the first Court, but, in order to save time, went direct to the Court of Appeal. The latter held that they could only consider the judgment of the Court below, and they could not go into the merits of the case as affected by new documents. In view, therefore, of the fact that the new documents were now on the record, but had not been before the first Court, the Appeal Court could not support the injunction on the unconsidered documents, and, therefore, the interim injunction must be quashed. There can be no doubt that the Wright Co. will win their action, seeing that their case was strong enough to enable them to obtain an injunction in the same Court before. The parties are now in the same position as if the injunction had never been obtained, and the trial in the first Court will come on for hearing at the end of the year in the ordinary way.

THE FRENCH GOVERNMENT AND AIRCRAFT.

Special Allowances for French Army Officers.

An illustration of the way in which aerial work is viewed by the French military authorities is afforded by a circular which has been issued by the French Minister of War, General Brun. This fixes the special allowances which are to be made to each officer in respect of ascents when on service, either in aeroplanes, airships, or balloons. The following is the text of the new regulations:—

1. A daily allowance will be made to officers and re-enlisted non-commissioned officers who are engaged in special aerial duties. The allowance has been fixed at 1 fr. 50 c. per day for officers, 75 c. per day for adjutants, and 40 c. per day for other non-commissioned officers.

2. In addition, an ascent allowance will be made to all soldiers taking part in service ascents, either in aeroplane, dirigible or spherical balloon. These allowances will vary according to the craft employed, as follows:—

a. In aeroplane: 5 francs for flight of less than 2 hours, 15 francs for flight of between 2 and 6 hours, and 20 francs for flights longer than 6 hours. The duration of several flights made on the same day will be added together, but no flight of less than 5 kiloms. will be recognised.

b. In dirigible balloons: 5 francs for a trip of between half an

hour and 2 hours, 10 francs for voyage of between 2 and 6 hours, and 20 francs for voyages of more than 6 hours.

c. In spherical balloons: 3 francs for trip of between half an hour and 2 hours, 5 francs for trip of between 2 and 6 hours, and 10 francs for trips over 6 hours.

These allowances are those for officers and adjutants, lower grades of the service being given half this scale. These regulations are retrospective from March 1st last.

Aeroplanes and Airships at French Manœuvres.

SOME very useful data should be forthcoming as the result of the French Army manœuvres which will commence on Saturday next at Picardy, where it is proposed to utilise eleven aeroplanes and four dirigibles. Four aeroplanes, manned by Capt. Hugoni (H. Farman), Lieut. Maillefer (H. Farman), Lieut. Aquaviva (Blériot), and Lieut. Caumont (Sommer), will be attached to the Second Army Corps, while another quartette, consisting of Lieut. Letheux (H. Farman), Lieut. Remy (H. Farman), Lieut. Bellanger (Blériot), and Lieut. Mayols (Wright) will be with the Ninth Army Corps. In addition to these three aeroplanes to be piloted by Lieut. Paulhan, Lieut. Fégant and Lieut. Cammerman, will act in conjunction with the four airships, "Clement-Bayard II," "Liberte," "Col. Renard," and "Zodiac III." In view of his accident, however, it is extremely doubtful whether Paulhan will be able to take part.

THE BLAIR ATHOLL EXPERIMENTS.

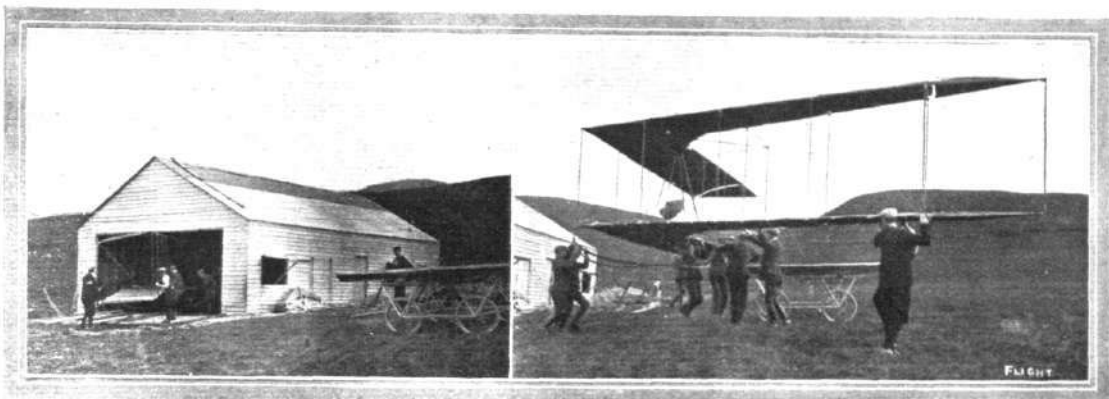


Fig. 1.

Fig. 2.

THE accompanying photographs of early Dunne aeroplanes have a particular interest on account of their association with the secret War Office experiments that were carried out during 1906, 1907,

a very arduous time of it before he could make himself scarce on such a desolate waste. Like the ostrich, he would doubtless be willing to bury his head in a hole if he could persuade himself that



Fig. 3.

Fig. 4.

and 1908 on the Duke of Atholl's estate at Glen Tilt. Our readers doubtless recollect the mysterious accounts of these experiments that appeared in the daily Press. It is safe to say that no reporter ever saw the machine—the Scotch gillies who acted as outposts saw to that; indeed we believe that it is rumoured thereabouts to this day that a broken walking-stick is all that remains in existence of a concealed telescope camera and of the foreign spy who carried it. Be that as it may—and we have no doubt that the individual in question will enjoy the story as much as another—the fact remains that very important experiments were, at that time, conducted under Government supervision, and that the machines employed were the direct forerunners of the Dunne aeroplane that is now attracting so much attention at Eastchurch.

The accompanying photographs were, as we have mentioned, actually taken on the spot. Fig. 1 shows the machine being brought out of its shed, and incidentally it gives a very good idea of the bleakness of the surrounding country, which is quite characteristic of the Highlands in this respect. We can quite easily imagine that an interested, but unauthorised, spectator would be seen from afar long before he could see anything worth noting, and it is not difficult to suppose that he might have

this would by any means protect his body from an onslaught of the aforesaid Scotch gillies.

Fig. 2 shows the machine being lifted on to its trolley. The



Fig. 5.

initial experiments were carried out with the aeroplane as a glider. It will be observed that the machine is mounted on a skid for landing; circular springs, which look like wheels, can be seen between the skids and the lower plane. In Fig. 3 the glider is undergoing inspection by the authorities, among whom were General Hadden, General Ruck and the Duke of Atholl.

Fig. 4 shows the start of a glide with Colonel Capper as pilot. In this attempt he attained a height of about 15 ft. above the ground, and finally charged the wall that is visible in the foreground of the picture. Subsequent to these experiments another machine was commenced in 1907, and was tried in the lower park at Blair Castle during 1908. The fifth photograph shows this machine, which is a power-driven aeroplane, ready for

flight. Lieutenant Lancelot D. Gibbs, whose name is now well known as an aviator, was at the helm. Mr. Gibbs made most of the glides on the Dunne aeroplane at the hill camp earlier in 1908, when he used a small scale replica of this machine.

A peculiarity in the appearance of "D 4," which might perhaps escape notice, is that it has been disguised by painting so as to obliterate as far as possible evidence of its essential characteristics, so far as they might be ascertained by an observer at a distance. The special curvature of the planes and other peculiarities which were fully described in our article on the Dunne aeroplane that appeared in FLIGHT of June 18th and June 25th, 1910, were thus rendered so far as possible invisible to the ubiquitous gentleman of the camera and the telescope.



ROUND-ABOUT FRENCH NOTES.

By OISEAU.

LAST week I compared the respective states of the aviation sections in the armies of France and Great Britain. This week comes the semi-official announcement that at least a dozen aeroplanes and four dirigible balloons are preparing to take the air in the French manoeuvres, which commence in a fortnight. The supporters of both types of flying machine will at last have an opportunity of comparing each method of flying. Very little doubt as to the result troubles the minds of the majority of those who have any knowledge at all of air conditions. Some weeks ago I was fortunate enough to see three dirigibles—the "Ville de Bruxelles," the "Colonel Renard," and the small "Zodiac"—and one aeroplane, the Wright biplane, piloted by Capt. Etévé, in the air at one time on the Issy ground. There was no wind at all, and the evening was quite warm. Everything was favourable to flying.

The dirigibles rose first after the usual cumbersome preparations, and were followed a few minutes later by the biplane. The superiority of the heavier-than-air type was at once obvious. Every movement, except that of rising, was quicker, and was performed with greater precision. And even as to rising slightly more rapidly, the dirigible once up, finds it difficult to descend again with any speed. On every turn the balloons drifted to leeward and lost way, and in straight flying they were perhaps ten miles slower. Etévé had he had some peculiarly horrible and compact explosive, such as will, no doubt, speedily be invented by the murderous ingenuity of man, could, with the aid of his passenger, have made considerable havoc amongst the three airships. Had three aeroplanes been present the three dirigibles would have ceased to exist in a very short space of time. It should be remembered that the rarefaction of air affects the engines of both types, thus making the possible effective height of both more or less equal. The aeroplane, moreover, can fly successfully in a wind to fore which a dirigible merely drifts. So long as he avoids the deadly backwash of the huge propellers of the airships, the aviator can do to a great extent as he pleases. After all, at least thirty aeroplanes, carrying a total of sixty men, can be purchased for the price of one dirigible. But only the future can settle finally the vexed question.

For some time past intending aviators have fought shy of the "Demoiselle" type owing to the great difficulty of learning to fly one satisfactorily. The small area of the planes makes a high speed necessary before the machine will commence to rise as all, and then unless one is careful, very careful, it will leave the ground with a spasmodic leap, only to fall a second later, probably turning over backwards on the way. Again, the smallness of the "Demoiselle" has created a doubt in the minds of many as to the possibility of performing a *vol plané* safely in the case of engine trouble. Audemars, whose courage I imagine is unquestioned, invariably flies low, rarely rising more than 30 ft. My own personal experience of the type had certainly led me to take the same view of its entire unsuitability for any other purpose save causing much amusement at

aviation meetings. As an acrobatic machine it is unrivalled. But a few days ago I was given another point of view by M. Roland Garros. Not only did he fly on his Demoiselle at the first attempt, but he has since made a number of quite long flights at a height of 1,200 ft. He says he has never found the slightest difficulty in gliding safely to earth at any time. On the morning of the 17th August M. Garros left Saint Cyr for Issy on his Demoiselle (which is that used previously by M. Santos Dumont himself) intending if all went well to be present at the arrival of the competitors in the Circuit de l'Est. His engine failing whilst over the Palace of Versailles he commenced to plane down from a height of 1,000 ft., only to hit an unseen telegraph wire in the Place d'Armes, completely turning turtle before reaching the pavement. Neither the machine nor the pilot was greatly damaged.

He speaks highly of the general control of the Demoiselle, and states that it is possible to perform evolutions with ease that on other aeroplanes would require the greatest skill. The position of the pilot, below the engine and wings, he considered was ideal, as one has an uninterrupted view of all happening in front or on the ground. After a descent the machine can be stopped in a few yards by using one's feet as brakes. Replacements are cheap and easily made. M. Garros says he thinks so highly of the Demoiselle monoplane that he has no intention of forsaking it for any other type.

Wienziens, who took part a fortnight ago in the race from Frankfurt to Mannheim, was entered to have driven an Antoinette with a Gnome engine at the Havre-Trouville meeting, but so far has made no public appearance. It would be interesting to watch the performance in flight, and it is to be hoped that Wienziens will find it possible to fly before the end of the meeting. Previous substitutions of other motors in place of that made expressly for the purpose on the Antoinette monoplane have not proved very successful. Both De Mumm and Kuller have fitted other engines, and yet their recent history has been that of misfortune rather than of success. While referring to the Antoinette I should like to point out that while the landing chassis at present fitted is the worst feature of that monoplane, the sketch which has appeared in some English papers does not accurately depict the chassis of the standard machine. The skid curves forwards and upwards, and is not simply a straight bar, as shown in the sketches. This is a small detail, yet it makes a great difference in the safety of landing.

On Saturday evening, Bielovucic started from Issy on a racing Voisin similar to that used by Champel at Lanark, and flew round the Eiffel Tower to the Place de la Concorde, thence up the Champs Elysées, over the Etoile and back again to Issy. He kept at a height of 1,200 ft. during the entire flight, and as far as I could judge appeared to be travelling at a very high speed. This new type Voisin has so far not been over successful but at last there are signs of future good fortune. The new tail is the simplest I have yet seen and is apparently one of the best features of the biplane.



THE ROLLS MEMORIAL

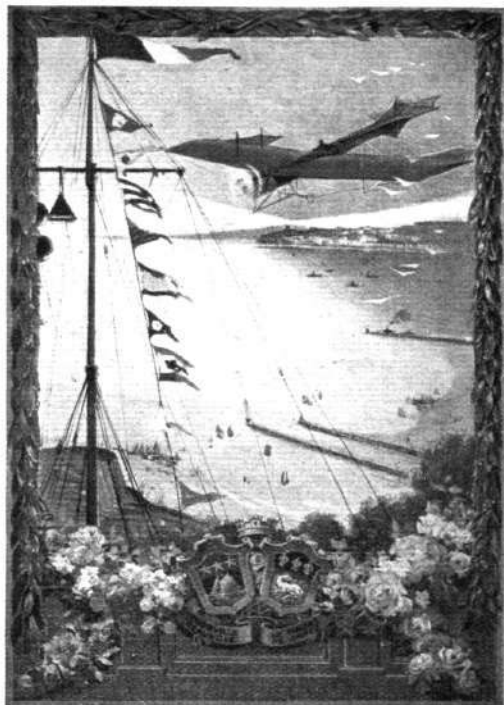
AT MONMOUTH.

THE proposal to erect a memorial to the late Hon. C. S. Rolls, at Monmouth, is now taking definite shape, and a fund has been started by the Mayor. The idea is to erect a statue in the main street of the town of Monmouth, and, as we have already mentioned, Sir Aston Webb has been consulted. The cost will be about £1,000, and it is hoped that all friends of the distinguished motorist, aviator and aeronaut will contribute to the fund. Subscriptions may be sent to the hon. treasurer, Mr. H. T. Simmonds, Weyeravon, Monmouth, or to Mr. W. Sambrook, the Mayor of Monmouth, at The Bryn, Wyesham, Monmouth.

OUR SPEED ALARM COMPETITION.

LETTERS, accompanied by descriptions and drawings for the Speed Alarm Competition, are acknowledged from Z. V. Lee, M. Thomas, R. E. Pearson, R. L. Pearson, T. Fogden, J. H. Cardew, Andrew Forson, A. W. Chapple, J. Bartlett, J. H. Wilkins, W. Dingley, A. V. Maund, W. H. Pickering, E. P. Hall, C. S. Kent, Frank Hiskett, F. W. Ludlann, George Burnside, A. A. Griffith, G. S. Beer, F. Rex Elderton, Chas. Lee, F. G. Fowle, D. C. Beale, J. Demott, E. Meyer, G. H. Harris, F. Barlow, F. H. Wilson, T. T. Hearle, W. V. Ford, Arthur Fugh, A. E. Evans, W. Dunbar, W. J. Stallan, F. Brown, F. Carter, O. A. P. Clark, G. Wachter, C. H. Ridpath, A. T. Wyllie, W. G. Gibson, T. Alexander, J. O'Connell, Aubrey Green, G. Eagle, Henry Rossy, R. B. Kirby, C. H. Rigby.

HAVRE MEETING.



HAVRE MEETING.—The charming poster, in colours, used for advertising the event.

It would be practically impossible to conceive a more suitable day for the opening of a flying meeting than Thursday of last week, when the *Grande Quinzaine de la Baie de Seine* opened at Havre. It was a hot sultry day, with the air but gently stirred by the faintest of breezes, and this enticed eleven of the aviators present to make

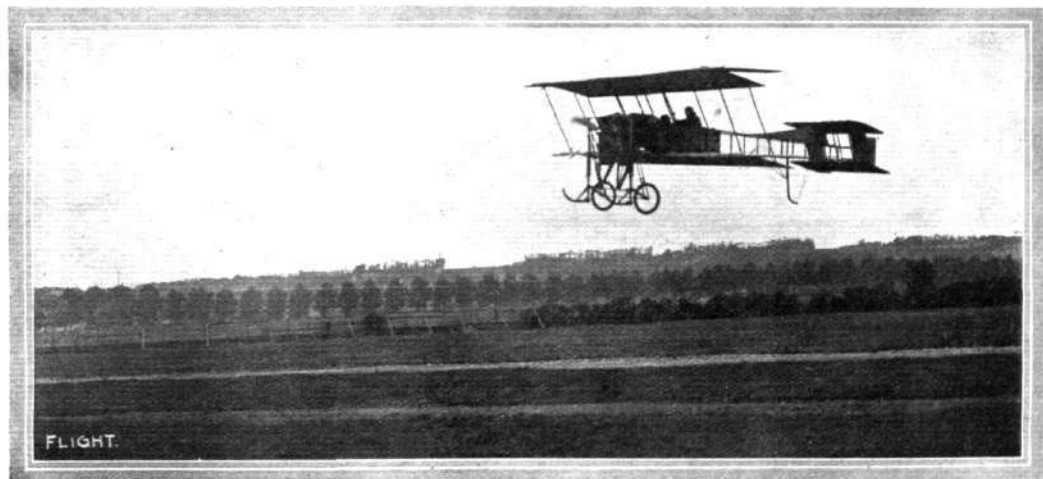
trial flights. It was no unusual sight to see six machines in the air at once. The first to get off the ground was Chassagne, and his trip of 14 kiloms. on his Hanriot won for him the daily prize for the first to cover 10 kiloms. The longest flights were by Mamet (166 kiloms.), Simon (96 kiloms.), and Barra (80 kiloms.), the two former on Blériots and the latter on a Maurice Farman machine. Latham won the daily height prize with 459 metres, while Aubrun took the speed prize. During the last few minutes of the day's flying Mamet had a mishap, and landed involuntarily, but without injury to himself. The following list shows the distance flown by each competitor during the day:—

- | | |
|--------------------------------|----------------------------------|
| 1. Mamet (Blériot), 242 kil. | 7. Latham (Antoinette), 22 kil. |
| 2. Simon (Blériot), 238 kil. | 8. Ladougue (Goupy), 18 kil. |
| 3. Barra (Farman), 134 kil. | 9. Hanriot (Hanriot), 16 kil. |
| 4. Molon (Blériot), 108 kil. | 10. Chassagne (Hanriot), 14 kil. |
| 5. Legagneux (Farman), 76 kil. | 11. Picard (Savary), 4 kil. |
| 6. Aubrun (Blériot), 22 kil. | |

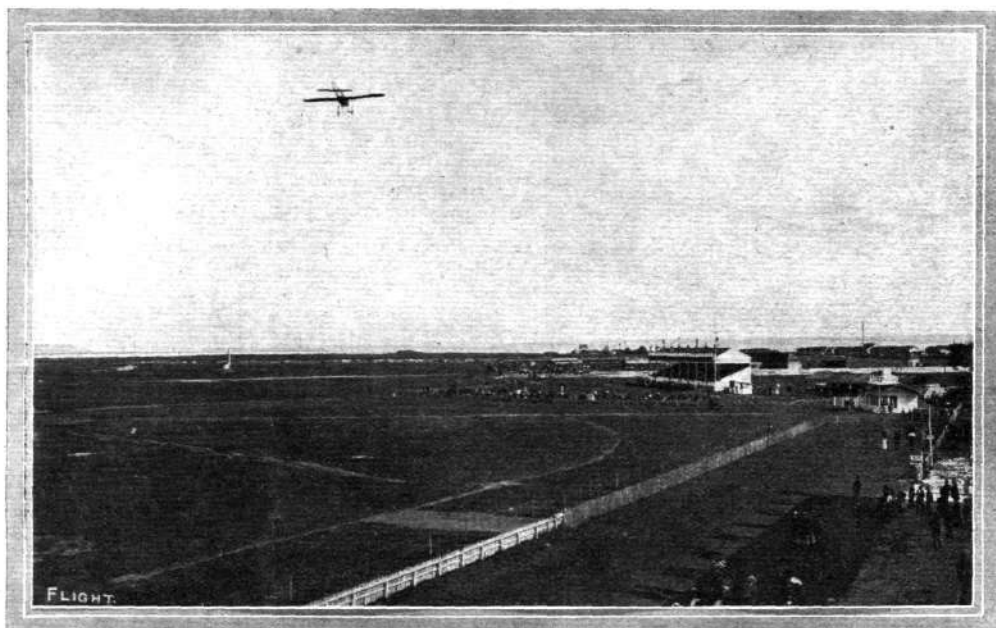
On Friday a change came o'er the scene, the weather being very bad. Only four flyers ventured out, both Latham and Legagneux giving splendid exhibitions of flying under adverse conditions. The former on his Antoinette fought his way to a height of 114 metres, thereby winning the daily height prize, while Legagneux completed the 10 kiloms., and thus won a daily prize. The other flights, both being very short, were by Petrowsky on a Sommer, and Marcel Hanriot.

An extraordinary day's flying was inaugurated on Saturday morning by Kuller on an Antoinette. He, however, only completed two laps, and thus left the daily prize for the first 10 kiloms. flight to be won by Hanriot. Most of those who had been flying on the first day were again in the air, and they were joined by Kuller and Thomas on Antoinettes, Morane, Leblanc and Bussion on Blériots, Martin on a Hanriot, Martinet on his Henry Farman, and Audemars on his little Demoiselle. Latham made a long flight of 116 kiloms., and also indulged in some high flying, but Morane was the chief exponent of the latter branch of the art. He annexed the daily prize by getting up to 1,130 metres. One of the most interesting flights of the day was an attempt on the height record by Hanriot, who succeeded in rising to 382 metres, then making a splendid gliding flight back to earth. The close of the day's flying was marred by an accident to Legagneux. He was making an attempt to win the daily prize for the longest flight, and had covered 46 kiloms., when, in cutting a corner too fine, one of the tail-planes caught on the mark tower. This caused the machine to lose its stability and fall to the ground. It was at first feared that he was seriously injured, but, after a thorough examination, a reassuring report was issued.

Sunday, again, was very nearly a blank day, but whenever the elements granted a brief respite, one or two flyers came out. In the morning Ladougue and Kuller ventured off the ground, but



HAVRE FLIGHT MEETING.—Ladougue, on his Goupy biplane, in flight with a passenger.



HAVRE FLIGHT MEETING.—General view of the aerodrome and grand stands, looking towards the sea. Aubrun, on his Blériot, is flying.

only a short flight was sufficient to demonstrate the folly of trying to go on. About 3 o'clock Latham came out, and by a series of daring flights secured the three daily prizes. He first completed the 10 kilom. course, and then rose to a height of 472 metres, while his total distance was 34 kilom. The only other recorded flights were Morane, 12 kilom., Hanriot, 12 kilom., and Audemars, 4 kilom.

The outstanding feature of Monday's performance was the high flying of Morane, and it is claimed that he broke the world's record. His height as recorded by the surveyor was 2,040 metres, while the barograph registered 2,200 metres. Latham also made an attempt to beat the world's record, but only reached 1,220 metres. The longest flights during the day were Mamet (114 kilom.), Aubrun (82 kilom.), Thomas (34 kilom.), and Hanriot (32 kilom.). During the day two aviators who have been known hitherto as exponents of the biplane type of machine made their *début* on Blériot monoplanes, these being Paillette and Paul de Lesseps.

The Oversea Flights.

Splendid weather prevailed on Tuesday last, the programme or which consisted of flights across the estuary of the Seine to Trouville. There was a strong breeze blowing at half-past three

when Latham set the ball rolling. He circled over the aerodrome till he was at a height of 300 metres, and then headed for Trouville. His example was quickly followed by Ladougné, Morane and Leblanc. The bay is $4\frac{1}{2}$ miles wide, and the passage was quickly made by Latham, who, without a stop, circled five times over the Deauville racecourse and returned to Havre. On the home journey he passed some of the other competitors, who made a landing on the Deauville racecourse. At four o'clock Latham was in the air again, and once more made the double journey. This time, before landing at Havre, he made a flight over the town. Soon after he had started for the second trip, Aubrun and Wiencziers successfully flew across the bay. The best time for the single journey from Havre to Deauville was that of Morane, 13 mins. 22 secs., while Leblanc was second, taking 9 secs. longer. Later in the day Latham made a third trip, and, flying across the bay, he, as on his first and second journeys, circled five times over the Deauville course before returning. The other five aviators successfully made the return journey to Havre, and in each case better time was recorded, Morane being first with 10 mins. 16 secs., and Leblanc second with 11 mins. 10 secs. Latham's best time for the round trip was his second, 36 mins. 17½ secs.

AIRSHIP NEWS.

Cardiff Testimonial to Mr. Willows.

A LOCAL movement has been set on foot in Cardiff to organise a testimonial fund for Mr. Willows. It is felt that this fund need not clash with the proposed national fund, which is intended to furnish Mr. Willows with a new dirigible. As the Lord Mayor of Cardiff stated at the inaugural meeting last week, the feeling in Cardiff was that his friends should do something tangible to recoup the heavy expense to which his family and himself had been put in order to enable Mr. Willows to achieve the very creditable success he had.

The Wellman Transatlantic Expedition.

A GOOD deal of interest is being taken by the visitors to Garden City, N.Y., in the preparations which are being made for the Wellman-Vaniman airship expedition which it is proposed shall start from New York on September 23rd. It is proposed to carry six persons, including Mr. Wellman, Mr. Vaniman, the engineer, Mr. Irwin, a wireless telegraph operator, and Mr. Louis Londe, an

expert mechanic, who is brother-in-law to Mr. Vaniman. The installation on the airship will include wireless telegraphic apparatus and a lifeboat, the latter providing the sleeping quarters of the crew.

A Long Trip by "Parseval VI."

ON the 24th ult. the airship "Parseval VI," carrying six passengers, in addition to her crew of six, left Munich and cruised in a south-westerly direction to Ammer-See, twenty-one miles away. There the airship landed safely after a flight of two hours, and later in the afternoon returned safely to her headquarters at Munich.

"Zeppelin VI" visits Strasburg.

FOR the third time in eight days the dirigible "Zeppelin VI," on Sunday evening, cruised from Baden-Baden to Strasburg, and after circling round the tower of the Cathedral, returned safely to her harbour. Altogether the cruise was enjoyed by thirty persons, each passenger paying a fare of ten pounds for a trip of about three hours' duration.

BRITISH NOTES OF THE WEEK.

Gordon-Bennett Cup Postponed.

IN order that the contest for the Gordon-Bennett Aviation Cup may not clash with that for the Gordon-Bennett Balloon Trophy which starts from St. Louis on October 17th, the former competition has been postponed until October 29th, when it will take place at Belmont Park, New York.

"Paris-to-London" Flight.

ALTHOUGH the delay in the progress of his flight from Paris to London cannot but be disappointing, it has given Mr. Moisant an opportunity of enjoying the true British hospitality of Sir Mark Collet, who has done everything in his power to make the intrepid aviator comfortable at his house at Kemsing, near Sevenoaks. On Sunday another abortive attempt was made to complete the journey to London, and although the start was arranged from the top of the Kemsing Hills, only about 100 yards were covered when the machine landed suddenly, with the result that another propeller was broken. Moisant has now declared that he will wait for a really calm day. The general conclusion reached by those who have visited his enforced resting place is that the Caterham Valley is not an ideal landing place, and that Moisant will find considerable difficulty in getting out of it. When he has got to London Mr. Moisant intends to fly back alone to Paris.

Devon and Cornwall Aero Club.

A PROPOSAL is on foot to organise a club for Devon and Cornwall, and a meeting was held on Saturday at the Lockyer Hotel, Plymouth, when it was decided to proceed with the formation of the club. Another meeting has been fixed for Tuesday, September 13th, at 8 o'clock.

Prize for Filey Aviators.

A MEETING of the subscribers to the local aviation prize fund was held last week in one of the aero sheds at Filey Beach, when it was decided that the prize fund should be awarded to the amateur aviator who made the longest flight in point of distance over the sands before October 1st, no flight of less than half a mile to count. Mr. J. W. F. Tranmer was appointed hon. secretary, and he will be glad to receive any further contributions to the fund.

Gaunt Biplane at Southport.

A BROKEN axle terminated the trials which were begun with the Gaunt biplane on Tuesday of last week at Southport. After a long spell of trouble with the engine, Mr. Gaunt managed at last to get it right and had the machine brought out. The engine was started up and the two propellers drove the machine along the sand for some distance, and there were signs that the machine was on the point of lifting. Just as it was beginning to turn the motor was stopped, and the wheels of the chassis sank into the soft sand. In attempting to shift the machine the axle was broken, and so it had to be again taken back to its shed for repairs.

Mr. Ferguson has Bad Luck.

RETURNING to his old quarters at Magilligan Strand on Tuesday of last week, Mr. Harry G. Ferguson made several satisfactory short flights, in one of which he carried a fair passenger, Miss Rita Marr, of Liverpool. Unfortunately, two days later, while experimenting, the machine caught fire. A flight of over a mile had been accomplished, at a height of 30 feet, and the machine had been brought safely to earth when the accident occurred.

Radley in Belfast.

ON Saturday Mr. Radley paid a visit to Belfast in order to give some exhibition flights. For several days previously high winds had been blowing, and on Saturday afternoon it was practically impossible to fly. The crowd, however, became very impatient, and threatened to break up the machine. In order to pacify them, Radley started up, but after flying 400 yards he collided with a tree, smashing the propeller and wings of his machine. Fortunately he escaped injury.

A Monoplane at Rothesay.

VISITORS to Rothesay for the Highland games were much interested in a new monoplane, entirely built in Scotland, and exhibited on the sports ground. As a result of a visit to the Blackpool meeting last year, Mr. A. B. Baird, a blacksmith of Rothesay, decided to commence the construction of a monoplane embodying certain features of the Blériot, Antoinette, and Santos-Dumont types of machine. The construction was commenced in March last, and the machine is now ready for trial. It has a span of 29 ft., the total wing area is 180 sq. ft., and the weight 380 lbs. The tail is similar to that on the Demoiselle machines.

Flying Meeting for Folkestone.

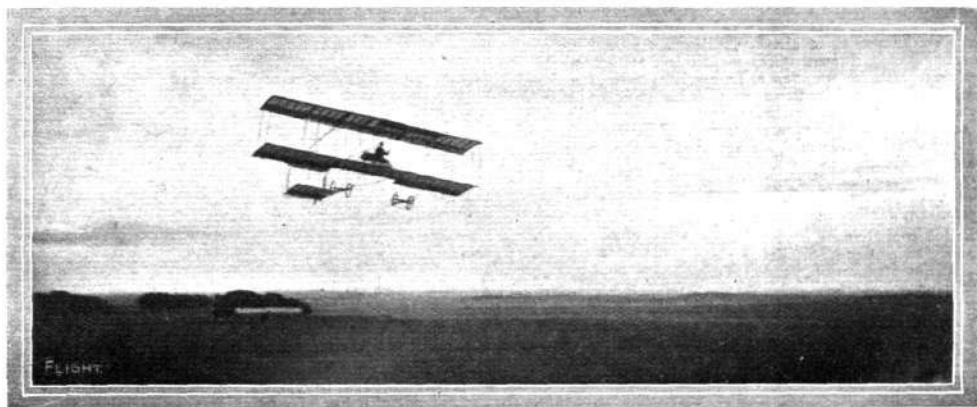
A MEETING was held at Folkestone on Monday with reference to the project to hold a flying meeting on the Folkestone racecourse on September 14th, 15th and 16th. It was stated that a sum of £1,000 would have to be guaranteed, and a deal of this was subscribed at the meeting. Several prominent aviators are said to have promised to take part, one undertaking to fly the Channel on certain terms.

Cross-Channel Aerial Services.

IT is reported that negotiations have been opened by the Ligue Nationale Aérienne with the municipal authorities of Folkestone and Boulogne, the object being the foundation of prizes for the inauguration of an aerial transport service between France and England. It is suggested that a prize of £2,000 shall be given to the aviator who shall make the double journey across *La Manche* four times in one week carrying one or more passengers.

Blériot Spare Parts in U.K.

OWING to a printer's error, the address of M. Blériot's headquarters in Great Britain, where a complete stock of spare parts will be kept, was given wrongly in our last issue. It should have been Belfast Chambers, 156, Regent Street, W.



A British-built "Bristol" biplane in flight on Salisbury Plain, piloted by Edmond. This machine was built entirely at their Filton works, near Bristol, by the British and Colonial Aeroplane Co., of which Sir George White, Bart., is a director. Needless to say, it has aroused considerable interest at the Company's flying school on Salisbury Plain, where Edmond has, we understand, been very successful in carrying passengers with it. This type of machine is now being turned out as rapidly as possible, and the Company's proficiency may be judged from the fact that the machine is seen in flight above the very first day it was erected.

THE DUBLIN MEETING.

ALTHOUGH it is to be regretted that the two days flying meeting—the first Irish aviation meeting—on the Leopardstown Racecourse at the beginning of the week was not favoured with some consideration from the Clerk of the Weather, consolation can be obtained from the fact that any lack of quantity was more than made up for by the quality of what did take place.

By way of a preliminary, Mr. Drexel early on Sunday made a trial flight with the intention of flying over to Lord Powerscourt's house for luncheon. He was, however, persuaded not to attempt the trip in the face of the bad weather conditions.

On Monday the flying was advertised to start at half-past two, but considerably before then a long continuous procession of public conveyances was wending its way to Leopardstown, each vehicle carrying its full complement of passengers. During the entire morning the sheds were besieged by spectators anxious to get a glimpse of the machines at close quarters and to ask questions of those who had found fame in the flying of them. At three o'clock Grace brought out his Henry Farman machine. Heavy rain showers had fallen during the day, and no sooner were the propellers started than they sucked up the water from the ground, and gave everyone in the close vicinity a liberal shower-bath. In the case of Capt. Dickson's machine, the motor, which was one of the recipients of the impromptu shower-bath, seemed to resent such treatment, and refused to work satisfactorily. Capt. Dickson was, therefore, only able to make a flight of about a quarter of a mile, and this stroke of

ill-luck was a great disappointment to his many Irish friends. Drexel and Grace both made several trips during the afternoon, and indulged in some fairly high flying. Drexel got up to a height of 1,200 ft., and came down with a characteristic gliding flight, and the roar of applause which greeted this performance showed that it was greatly to the taste of the audience. Grace also demonstrated the passenger-carrying capabilities of his Farman machine. Just before the close of the flying for the day Capt. Dickson got his motor running perfectly, and then made a splendid flight, landing by a glide at a very steep angle, which startled those unaccustomed to such exploits. Practically the whole of the flying was witnessed by the Lord Lieutenant and Countess Aberdeen, who arrived with a large party soon after three and remained until close upon six o'clock. In the evening the aviators were right royally entertained at a banquet given by the Corinthian Club.

A high wind on Tuesday prevented any flying before four o'clock, when Grace determined to make a flight. He rose quickly, but the gusts of winds swayed his machine considerably, and caused it to pitch and roll like a boat on a choppy sea. After completing about three miles he determined to land, much to the relief of the spectators. Some time afterwards Mr. Grace carried several passengers for long hops along the course, and Capt. Dickson made a flight of half a mile, and finding himself unable to clear some trees, he made a very skilful landing between two closely-set wire fences.

IRELAND'S INTRODUCTION TO FLIGHT. IMPRESSIONS OF AND COMMENTS ON THE LEOPARDSTOWN MEETING.

By H. MASSAC BUIST.

FOR months past the spirit of flight has been abroad in Ireland, for it was plain that such a sporting people would be interested to the point of fascination in the mere audacity of man's attempt to conquer the air by riding the wind at will with machines heavier than the atmosphere. We recall, of course, that Mr. J. T. C. Moore-Brabazon, who was the first Britisher born and bred to take up flying, is an Irishman; also that the only machine in these Islands that has been designed, built throughout, and flown by one man is Mr. Harry G. Ferguson's monoplane, which, fitted with an eight-cylinder Jap engine, carried its creator for a flight of three miles at Newcastle, Co. Down, on August 10th last. As matters in the air are stirring, it is perhaps meet that the Aero Club of Ireland should have come into being on the anniversary of the Gunpowder Treason and Plot—the fifth day of November, 1909. Eighteen miles from Belfast, Mr. J. Radley made a flight last week under unfavourable weather conditions and merely to entertain the onlookers, the result being impact between a tree and the monoplane; while in other parts of the country an Irishman of a good old Queen's County family has flown in the person of Mr. Cecil Grace.

Properly to introduce aeroplaning to the public in such a prominent fashion as to mark the commencement of an organised movement for the fostering and development of aviation in Ireland, however, called for a more memorable and elaborate scheme. At least, that was the opinion of Mr. J. C. Percy, a founder of the Irish Aero Club. Mr. Edward White pointed out at the banquet given on Monday to those who flew at Leopardstown that the idea of the meeting was due to Mr. Percy, who further took the bull by the horns at a period when things looked very nebulous—and while yet there was no idea as to which aviators would be engaged—by securing Leopardstown racecourse, six miles out of Dublin, at his entire financial risk; then, by his own initiative, setting to work to raise a guarantee fund of £2,500 for the two days' flying, a task which needed the more pluck in that every day that passed brought news from abroad, and sometimes from this country, of yet another financial failure to add to a list from which there was not an omission to prove an exception to a rule. Let it be recorded at the outset, therefore, that the first Irish flying meeting witnessed the breaking of quite an unexpected record, for despite the fact that on Monday there was considerable wind and there were intermittent showers over £1,500 was taken in gate receipts; while on Tuesday, when the wind was puffy and at times very forceful and treacherous as to direction, so that none who know anything of the matter could have anticipated flying, more than £1,000 was taken at the gate. Thus there are substantial grounds for anticipating that when the figures shall have been checked finally this meeting will break a record in proving the first profitable venture in connection with affording the populace an opportunity of seeing flight.

Sundry Factors in the Situation.

It has been observed that nowadays one flying meeting is like another. As is the case with most generalities, this one is true

to a certain degree only. I shall be able to show that there are many points of peculiar interest in connection with the Irish Aero Club's timely venture and which are worthy alike of remark and record. The first lesson I draw from it is that if one does not attempt to do things on too ambitious a scale both ends can be made to meet. Whether you plan a meeting for one day or for a week the weather is equally a gamble. The Irish picked two days and chanced their luck in characteristically sporting fashion. Further, thanks in no mean measure to the sound judgment, enviable diplomatic qualities and brilliant business ability of the chairman of the Irish Aero Club, Mr. John Dunville, it was decided to engage, and there only were engaged, three flying men. The fact that Mr. Drexel and Mr. Cecil Grace were secured before the opening of the Bournemouth meeting betokens remarkably astute judgment. The third man of the team was Captain Bertram Dickson. Thus there was a "Wake-Up England!" note about the proceedings, for the organisation did not have to recruit foreigners to do the flying. The demonstrators were wholly British; though it is interesting to note that the machines and engines employed were in every case wholly French, that being the more needful in that the sole aim was to exhibit to the Irish public the degree of practicability that has been achieved in the matter of mechanical flight at this comparatively early stage. We see, therefore, that on the one hand there was no question of engaging the self-advertising type of flyer, who co-operates so excellently well with sensational journalists in furnishing exciting paragraphs for the newspapers; and on the other hand, of setting up sheds wholesale to be occupied by mere grass-rollers. Attention was centred on three men who are rare among the bulk of aviators nowadays in being in no snobbish but in a very true sense persons of quality, in that character and breeding are abundantly manifest in the record of the behaviour of each to date in the ocean of air.

The handiness of the course selected to the Irish capital was a vastly essential matter to serve the purpose of enabling the greatest possible number of people to take advantage of the venture, which had a distinct educational purpose for its chief, though not for its apparent, aim. Inasmuch, too, as Mr. J. C. Percy and his enterprising colleagues have never embarked on any motoring enterprise of the many in the record of Irish activity in this connection that has resulted in a financial failure; naturally they were eminently desirous that the flying movement should have an equally inspiring send-off. In the Leopardstown racecourse they had ready to hand practically every facility for the handling of vast throngs of onlookers; albeit a few took free views from the neighbourhood of the railway station abutting on the course and certain other coigns of vantage. Though not personally fond of horse-racing, the Earl of Aberdeen, Lord Lieutenant of Ireland, took such a keen interest in this flying venture that on both days he brought down large Vice-regal parties to the meeting. Some notion of the degree of interest that it aroused may be had from the fact that the previous record attendance at Leopardstown was on the occasion of the visit of the

late King Edward there a few years ago; while the number of people who attended the flying meeting has surpassed the total of those assembled on the occasion of that royal visit.

Touching the Organisation.

The organisation was something that contained considerably fresh features. Apart from the services of the Irish Constabulary, including a mounted section, there was a detachment of cavalry, which is certainly quite a new feature in flying sport in Britain and which put one in mind of the facilities that are afforded in connection with similar enterprises on the Continent. The value of these troops in getting across the field from point to point at any instant on any sort of errand, and for making a way among the crowds of too interested onlookers for an aeroplane to be wheeled from its shed to the starting place or taken back, was matchless. Moreover, to a greater degree than even obtained in Scotland, every man who had an official's badge had to work industriously while he wore that badge. Of course, as it was merely a question of exhibition flights, the management was rendered considerably more simple because there was no starting line to be considered—there were no times to be taken, and so forth. There was, nevertheless, work for over a hundred stewards, whose activities were controlled by the half-dozen members of the committee of management, the top man of the lot, all in inches and in authority, being of course the unrivalled Mr. Edward White.

Concerning the Character of the Course.

Neighbouring by the Dublin and the Wicklow Mountains, having a belt of big trees round two-thirds of its circumference, and grand stands, lawns and fenced enclosures to mark the rest, with all the ground inside the course intersected by one long hedge and by sundry wire fences bedded in concrete, you may readily judge that, from the point of view of the aeroplanists, even in ideal weather the ground would have been considered utterly impossible for the purpose six months ago. Nor could any save accomplished flyers, using comparatively dependable machines, be allowed on it by responsible persons even at this present stage, for on calm days the proximity of the mountains, and the closer presence of trees and buildings, give all manner of fantastic turns to the wind currents, so that it required all the pilot's ability so to steer his machine that, in the event of the motor failing on a sudden, the aeroplane might be landed without smashing it up in the relatively brief spaces available, without coming in contact with fixed boundaries of some sort. Looked at from the point of view of the demonstration of the science of flight and of the practicability of it to date, therefore, the very adverseness of these conditions gave the exhibition efforts a value which it was impossible for those on the vast plain at Béthény, by Rheims, for example, to possess, because there the situation as to country and so forth is practically ideal.

The Flight of the Meeting.

The Irish public is therefore heartily to be congratulated on having been afforded the spectacle of genuine aerial navigation, particularly on Tuesday last, when in the afternoon, in an exceedingly strong and gusty wind Mr. Cecil Grace rose on his Farman biplane, head to wind, then fought his way over the finishing straight well out towards the mountains, making leeway and dropping now into the trough then rising on to the crest of the viewless air-waves, which also treacherously attacked him sideways as though in wantonly mischievous mood, causing the machine to roll like a ship in a heavy sea. When he had gone so near the hills that it became needful to turn, he did not come round head to wind but made to the leftward, so that presently he had the wind in his wake, then the biplane seemed suddenly to shoot ahead for, with the following gusts, the rate of travel of course became instantly at least thrice as fast as it had been on the other tack. He continued this way for a mile or more at a speed which must have been at least 60 miles an hour in relation to the land below. Then he made a wide sweep, still over trees, and fought his way once more round the course, the constant activity of his hand at the control lever revealing how instant and how forceful were the prankish forces of nature that were being pitted against the prowess—one had well-nigh said impertinence—of man. Just as he came over the heads of the onlookers, the biplane gave a great plunge into the trough of a gust, the spectacle being remarkable, for as the biplane pitched the loudly cheering onlookers evidently thought that it would be impossible to recover her. Their cheers stopping as though some invisible force had instantly muffled every mouth as one. It is strange to behold a vast concourse of people catch the breath as one person, what time their hearts leap with apprehension. Despite the enormous strains that flying in this sort of weather must impose on a machine, the biplane with the clipped under main plane answered to the control of the pilot, who got her away from over the spectators and began putting her up the finishing straight, when he encountered worse gusts on worse. But after passing in front of the Royal box, Mr. Grace was able, by a combination of great skill, fine nerve and good luck, to land her without even touching the fencing.

Spectators More Than Satisfied.

That essay was the finest flight of any on the two days of the meeting, being a demonstration of what aerial navigation really is. It was seconded three hours later, in somewhat better conditions, by Captain Bertram Dickson, who rose up on his older type Farman biplane, flying with relatively little difficulty head to wind. But instead of making for the finishing straight he turned her across the ground inside the racecourse. One at once realised how embarrassing were his conditions, for the side winds now rocked his machine, and the gusts made her pitch in a fashion that certainly afforded a sensational spectacle. The really thrilling moment was when it became obviously unwise to continue further, though he was now over ground where there was comparatively little distance between each of the wire fences. Here his experience came to his aid, the alighting being, perhaps, one of the finest that has been witnessed, for to save a smash after touching the ground he had to drop at a very abrupt angle to descend despite the treachery and the strength of the gusts. Captain Dickson has long been known as a fine glider, but he excelled himself on this critical occasion, and not only came down without breaking anything by impact with the ground but further contrived to prevent his machine running any appreciable distance. "I never came down in such a hurry before" he said, and one can well believe it. As for Mr. Armstrong Drexel, he very wisely refrained from flying on Tuesday, for we may recall how at Lanark he went out several times in winds in which nobody else would fly, and on one of these occasions the little Blériot monoplane got blown over to such an angle that he thought he would not be able to recover her. On the previous day, however, he flew in extremely picturesque fashion at heights of between 600 and 1100 feet, the public, as usual, being vastly more fascinated by the spectacle of a monoplane than by the sight of the two-deckers. From the mechanical point of view there is nothing to record as having been learnt at Leopardstown, where it was exceedingly fortunate that at no critical time, in fact not throughout the proceedings, did any engine fail during flight; for though on the opening day Captain Dickson's motor went weakly, that was always from the very outset of his flights, so that he never rose to any appreciable heights. Unquestionably the flyer who most distinguished himself at this first meeting was the Irishman of the trio, Mr. Cecil Grace, who showed how a biplane can fly in really difficult conditions. Some notion of how thoroughly satisfied the onlookers were may be had from a relation of the fact that one old gentleman was so delighted that, though by an error he had been made to pay twice over for the admission of his party to the ground, he called on the committee to congratulate it, saying that he had had such excellent value that he wanted no more than that the meeting should prove a financial success, therefore he would not hear of getting back the money due to him.

Striking the Iron while it is Hot.

The meeting has, of course, served enormously to increase Irish enthusiasm for the newest and most wonderful of all conceivable modes of locomotion. One of the results that should come from it should be a great increase in the number of members of the Irish Aero Club, the yearly subscription for which is only one guinea and which has decided to become associated in the most intimate fashion with the Royal Aero Club, so that members will enjoy every facility of belonging to an organisation that can be recognised internationally. As in the case of the Scottish Aeronautical Society, as the representative of the Royal Aero Club in Ireland the Irish control the sport of aviation in that country under the rules of the International Aeronautical Federation. The Royal Aero Club is to be heartily congratulated on this development. In having sent across Mr. Harold E. Perrin, its secretary, it has done more wisely than on many occasions one has in mind, for the breezy personality, the indefatigable industriousness and imperturbable good humour of that enthusiast appealed at once to the sporting Irish temperament. Mr. Perrin being taken forthwith to the hearts of our neighbours across St. George's Channel, who will always have a hearty welcome for him. At the dinner given by the Corinthian Club Mr. Perrin appeared in a new rôle by making a speech which was admirably brief and to the point and which revealed him somewhat in the light of a diplomat whose task was, of course, rendered easier by the happy circumstance that Mr. John Dunville occupies the dual office of being chairman of the Irish Aero Club and a member of the Committee of the Royal Aero Club.

In conclusion, it is gratifying that Ireland has been able to hold her first flying meeting thus early in the movement, because such an initial essay must necessarily be conducted over more or less a restricted area, and one presumes that the conclusion is now universal that in 1911 there will be no aerodrome flying meetings, but only point-to-point cross-country events. The organisation at the back of the Irish Aero Club consists, in effect, of the cream of the honorary talent that has been available for, and which has made such a pronounced success of, the series of Irish reliability tours for motor cars. As one who has in large measure been

responsible for the abandonment of this class of test now that it has served its purpose, I heartily welcome the transference of such an excellent nucleus of organisation to the field of aerial motoring, which calls for all manner of ably-directed effort in every country in the world. Certainly it would be remarkable if, in the near future, Ireland does not take a very prominent part in the grand work. Indeed, I shall be surprised if next year she does not hold a point-to-point aeroplane race, as, for example, between Dublin and Belfast, or the other way about. At Leopards-town all the officials of the Aero Club of Ireland worked each in his capacity to the best of his ability to ensure success. The Com-

mittee of Management consisted of Mr. John Dunville, chairman of the Club, Major Wellesley, Mr. James C. Percy, and Mr. Edward White, Honorary Secretary of the Club; the President being the Earl of Mayo, and the Vice-President Sir H. G. Bellow. The members of the Committee, besides those already named, are Messrs. J. T. C. Moore-Brabazon, Harry G. Ferguson, R. F. H. White, Wickham H. B. Moorhead, J. M. Davies, Goodwin B. Swift, G. Hutton, S. Wilson, A. E. Porte, F. F. C. Trench, D. O'B. Gill, J. B. Dunlop, junr., R. J. McCreedy, Major Crookshank, and Sir John Nutting, the Honorary Treasurer being Mr. Walter Sexton.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Rolls Memorial Library.

Mr. Frank Hedges Butler has presented to the "Rolls Memorial Library" Turner's "Astra Castra" and "The Report of the Advisory Committee for Aeronautics."

Committee Meeting.

The next Committee Meeting will be held on Tuesday, the 6th September, 1910.

Gordon-Bennett Aviation Cup.

The date for the International Race for the Gordon-Bennett Aviation Cup has been fixed for October 29th, 1910, at Belmont Park, New York.

Rolls Memorial Fund.

Subscriptions of 10s. have been received from the following members up to Wednesday, August 31st, 1910:—

Dr. J. J. Acworth.
R. G. Alford.
Hugh Andrews, D.L., J.P.
Harold Arkwright.
Hart O. Berg.
John Bickerstaffe.
Alfred Bird, M.P.
Bertram Blount.
G. H. K. Bone.
H. Percy Boulnois.
Chas. W. H. Braun.
Marshall Bruce-Williams.
Ernest C. Bucknall.
Alan H. Burgoyne, M.P.
F. Hedges Butler.
Griffith Brewer.
Col. J. E. Capper, C.B., R.E.
Capt. A. D. Carden, R.E.
A. S. B. Chapman.
R. L. Charteris.
S. F. Cody.
G. H. Colt.
Capt. B. D. Corbet.
W. J. Crampton.
Claud Crompton.
Sir Claude Champion de Crespigny, Bart.
J. D. Denham-Smith.
Sir A. Conan Doyle.
Mrs. Duckham.
S. F. Edge.
H. M. Edmunds.
S. Z. de Ferranti.
A. E. George.
Mrs. Granger.
Major F. Egerton Green.
Capt. Harold P. Green.
Capt. A. H. W. Grubb, D.S.O., R.E.
Capt. P. S. Harland.
Dr. H. S. Hele-Shaw.
Claude Johnson.
Henry Johnson.
C. B. Krabbé.
Mrs. A. M. Krabbé.
David H. Kyd.
Robertson Lawson.
W. J. Leonard.
Henry D. Lewis.
Eric R. Loder.

Sir Hiram S. Maxim.
F. A. Maythorn.
W. N. McClean.
Alfred Mond, M.P.
Mr. and Mrs. Moore-Brabazon.
Sir Charles W. Morrison-Bell, Bart.
Augustus Oddenino.
Percy Ogden.
Phil. Paddon.
Sir Richard A. S. Paget, Bart.
W. J. Peall.
Walter F. Pease.
Mrs. Leigh Pemberton.
Percy Leigh Pemberton.
Ernest Pitman.
W. H. Player.
H. E. Robson Roose.
Major-Gen. R. M. Ruck, R.E.
H. L. Searle.
Admiral of the Fleet Sir E. H. Seymour, G.C.B.
C. E. Shephard.
E. Shrapnell Smith.
A. M. Signer.
Frank Souter.
Stanley Spooner.
F. Harold Sully.
Hon. Arthur Stanley, M.P.
Mrs. E. M. Styan.
Alan J. Sykes, M.P., D.L., J.P.
Arthur Sykes.
Thomas J. Taylor.
J. L. Travers.
Charles C. Turner.
S. Twining.
A. H. Vincent.
E. W. Wakefield.
R. A. Wall.
C. W. Wallace.
P. Waterhouse.
Norman F. Wells.
Oswald H. Wells.
Samuel White.
W. Charles Whitham.
E. T. Willows.
Thomas Winch.
J. W. Wood.
Howard T. Wright.
Hon. Mrs. Walter Paton, 5s.

Report on Barograph used by Mr. J. Armstrong Drexel, at Lanark on August 11th, 1910.

National Physical Laboratory, Teddington.

The barograph submitted for test by the Royal Aero Club marked Short Brothers, aeronautical engineers, and stated on the label annexed to have been used by Mr. Drexel on August 11th, 1910, has been compared with the standard instruments of the National Physical Laboratory, and the percentage error of reading over the portion of the scale used has been found to be inappreciable. Corrections of - 1 mm. at the lower level and + 2 mm. at the upper were found, but these are less than the error of reading. It appears from the chart sent with the instrument and from these tests that the pressure at the start was 741 mm. of mercury, and that at the highest point reached 582 mm. of mercury. The difference in altitude which corresponds to these readings depends on the average temperature of the air column between the two points of observation and our information does not include this.

It is also affected by the humidity. Accordingly, application was made to the Meteorological Office for the most probable values of temperature and humidity, and their report is appended.

Assuming as the best values of pressure 741 mm. and 582 mm., with a mean air-temperature of 11°C., and the most probable value for the humidity, the altitude reached works out at 6,621 ft. If the uncorrected values of the aneroid are used—and the corrections are too small to be determined with certainty—the value is 6,752 ft.

Copy of Report received from the Meteorological Office.

The following results have been obtained from the International Meteorological Tables, Chapter IV, Table IX.

In order to apply the table it is necessary to make some assumption as to the temperature. The Meteorological Office evening reports show that 16°C. = 60.8°F. may be taken as the temperature value at the surface without great error. The approximate height of the ascent is 2,000 m. Adopting the usual temperature gradient 0.5°C. per 100 m., we get 6°C. as the temperature at the top of the column. This gives $(16 + 6) \frac{1}{2} = 11^\circ \text{C.}$ as the mean temperature of the air column.

We can now apply Table IX of Chapter IV of the International Tables.

$H_0 = 742 \text{ mm.}$	
$H = 580 \text{ mm.}$	$Z = 2,051 \text{ m.}$
$\theta = 11^\circ \text{C.}$	$= 6,729 \text{ ft.}$

Applying the instrumental correction determined at N.P.L.

$H_0 = 741 \text{ mm.}$	
$H = 582 \text{ mm.}$	$Z = 2,010 \text{ m.}$
$\theta = 11^\circ \text{C.}$	$= 6,595 \text{ ft.}$

If we apply a correction for humidity (for which we have to assume probable values) and for the variation of gravity with altitude, as given in Tables IX, B, C, D, we get the following values:—

$H_0 = 742 \text{ mm.}$	
$H = 580 \text{ mm.}$	$Z = 2,058 \text{ m.}$
$\theta = 11^\circ \text{C.}$	$= 6,752 \text{ ft.}$

or	$H_0 = 741 \text{ mm.}$	
	$H = 582 \text{ mm.}$	$Z = 2,018 \text{ m.}$
	$\theta = 11^\circ \text{C.}$	$= 6,621 \text{ ft.}$

An error of 1°C. in the assumed temperature of the air column introduces an error of 22 ft. in the calculated height.

Z gives the height above the ground, not that above sea level.

August 17th, 1910. (Signed) R. G. K. LEMPFERT.

August 18th, 1910. (Signed) R. T. GLAZEBROOK, Director.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

(NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary. We would ask Club Secretaries in future to see that the notes regarding their Clubs reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.)

Midland Aero Club (GRAND HOTEL, BIRMINGHAM).

AN important Council meeting was held at the Grand Hotel on Friday, the 26th ult., when the treasurer presented his financial report, which gave entire satisfaction to members of the Council, and will doubtless also do so to members of the club generally when presented at the annual meeting, to be held the first week in October. During the last two months 150 new members have been enrolled.

A letter of resignation was read from Mr. Ivy-Rogers and accepted with much regret. A successor, together with officers to take the place of retiring members of the Council, will be elected at the annual meeting.

An interesting club meeting will take place to-day, Saturday, September 3rd, at Dunstall Park, Wolverhampton, when the following members of the club will make experimental flights:—Capt. Dawes (25-h.p. Humber monoplane), Messrs. H. F. Holder (25-h.p. Humber monoplane), G. E. Bradshaw (40-h.p. Star monoplane), G. B. Mann (25-h.p. Mann monoplane), and Hartley (22-h.p. Demoiselle monoplane).

In addition to these members, Lieut. Seddon, R.N., will bring out his tandem biplane, of which much is expected.

Members also of the Birmingham Model Aero Club have been invited to this meeting, and suggestions made that any of their members might fly the models of which their club make a speciality.

Various matters relative to the Wolverhampton flying meeting were discussed, and the members congratulated on the entire success of this meeting, which, although marred by the execrable weather which prevailed, was undoubtedly an unqualified success from a sporting point of view. It was felt and generally admitted that it would have been an unqualified financial success had the last few days of the week been fine.

Paddington and District Aero Club.

ON Monday evening last an enthusiastic meeting was held at the Secretary's address, and many good suggestions were made, several of them being adopted. It was decided by the Committee that every facility should be offered to members to take a practical interest in the manufacture of aeroplanes and the science of aviation generally.

Arrangements have been made by which models are hired out to tradesmen for the purpose of window decoration at a small fee, which goes to swell the club funds.

A full-sized machine has been kindly placed at the disposal of the club by Messrs. J. Hurlin and Son, aeroplane manufacturers, of East London. This machine will be taken to pieces and re-built by club members, thus enabling them to gain a splendid insight into the manufacture of actual flyers.

A library is also being formed for the use of members, and any contributions of books, &c., will be thankfully received; also a picture gallery which will comprise photos and views of flight pioneers, present and past machines, &c.

Competitions with other clubs will become a feature of the club, and prizes will be awarded frequently.

Readers interested in the above would oblige by making early application for *founders'* membership to Hon. Secretary H. Hurlin, 2, Edbrooke Road, Harrow Road, Paddington.

Sheffield & District Ae.C. (22, MOUNT PLEASANT RD., SHARROW)

A GENERAL meeting was held on the 24th ult. In the absence of the chairman (Mr. A. V. Kavanagh), the chair was taken by Mr. Robert Taylor, of Rotherham.

Mr. Patrick Alexander moved a resolution that a model flying competition, confined to club members, be held on September 3rd. This was adopted, and will take place on the date named at the gliding ground, Bawtry Road, Tinsley, at 3 p.m. Two classes, one for models under 5 ozs. weight, one for models over 5 ozs. weight. There will be no distinction between amateurs and professionals. Entrance fee 6d. each model.

Time permitting, experiments in weight carrying will be indulged in. If the weather is suitable the gliders will be brought out for trial. Several eminent gentlemen connected with the British Association are expected to be present.

During the visit of the British Association the club will be represented at the Builders' Exchange, Cross Burgess Street, Sheffield, where those persons interested in aviation will be welcomed.

The next general meeting will be held on Wednesday next, September 7th, at the Builders' Exchange, Cross Burgess Street, Sheffield, at 8 p.m. All members please attend.

FOREIGN AVIATION NEWS.

A Voisin Biplane Over Paris.

EARLY on Monday morning Bielovucic started off from Issy with the object of beating the world's altitude record by circling over the Eiffel Tower. At ten minutes to six he rose from the Issy parade ground, and in a few minutes he was over the tower, his barograph registering a height of 800 metres. After making a wide circle, he returned to Issy and landed by a gliding flight after a trip which had lasted 19 minutes. He promised to make another attempt during the afternoon, but the high wind caused a postponement. On Saturday the same aviator, in the course of a nine-minute trial spin, circled over Paris and the district of Chatlet.

Mont St. Michel Meeting.

TUESDAY of last week, the last day of the three days' meeting at Mont St. Michel, was spoiled by the wind and rain, but in spite of this heavy handicap Pischoff made a good flight on his monoplane, while Champel on his Voisin also got off the ground, but his motor was very obstinate. Before packing up their machines on the following day both these flyers gave short exhibition flights.

Flying Over Biarritz and Bordeaux.

IN connection with the exhibition flights given at Biarritz last week, one of the most interesting flights was made by Tabuteau, on Friday. Starting from the Bayonne aerodrome, he flew round the spires of the Cathedral at Biarritz, then over the pine forests, round the lighthouse; then, after three miles' flight over the sea, he returned, and circled round the Carlton Hotel, and so back to the aerodrome. The exploit won for the Maurice Farman exponent a prize of 5,000 frs.

On the 24th ult., Ruchonnet, the well-known Antoinette pilot, left the aerodrome, whilst Mérignac circled round the Cathedral spires and then above the monument of the Girondins.

Bregi Reaches 1,500 Metres.

IT was unfortunate that after making a splendid flight on his Voisin machine, and reaching a height of 1,500 metres, at Mour-

melon, on the 26th ult., Bregi should have been compelled to descend owing to the rain.



De Baeder, who is now recovering from his recent severe accident.



Lieut. Remy, seated in his Henry Farman machine on which he recently spent a week "touring" over the North of France. As we recorded in our last issue, he covered about 500 kiloms. in eight days.

Foreign Officers at Mourmelon and Etampes.

AFTER qualifying for the Ae.C.F. pilot's certificate on a Henry Farman biplane on the 25th ult., Captain Tokuyama, of the Japanese Army, immediately arranged to take lessons on an Antoinette monoplane. He received his first instruction on Monday last. Another notable foreign officer who is being instructed at the Antoinette school is Colonel Zelinski, of the Russian Imperial Guard.

Lieut. Calderani, the Italian officer, who was taught by Wilbur Wright to use one of the Wright flyers, has arrived at the Henry Farman school at Etampes and is taking lessons. At the adjoining Blériot school Lieut. Peotrowsky has been trying the Blériot purchased by the Russian Army.

A Breguet for the French Army.

BY way of testing the Breguet biplane, built for the French Army, and intended to carry three persons, Louis Breguet, in the presence of Capt. Madiot, on Saturday flew for 32 mins. at Brayelle, attaining a speed of 100 kiloms. an hour, and this in spite of the fact that the machine carried a passenger and enough fuel, &c., for two hours. The total weight carried was 205 kilogs.

Doings at Mourmelon.

THERE has been a tremendous lot of flying lately at Mourmelon, mostly by the military officers who are to take part in the manoeuvres. On Sunday, for instance, Lieuts. Féquant, Sido, Mailfer, Remy, Lethoux, Basset, and Capt. Francois were out on Farmans, while Adjutant Menard was busy giving lessons to Sergeant Maxer and Sapper Lombardy. There were also a number of other pupils at the Henry Farman school being instructed, and Wynmalen made an attempt to beat the altitude record, but he had only reached 1,200 metres when wind and fog caused him to descend. Mille. Dutriex qualified as a pilot on the 25th ult.

A number of pupils are receiving instruction at the Voisin and Antoinette schools. Mme. Niel has made several splendid flights on her Koechlin monoplane.

M. Paulhan has a Mishap.

ALL interested in flying will regret to hear that Paulhan, who was to have taken part in the military manoeuvres, will be unable to do so owing to his having sustained a fractured wrist while starting-up his motor car. It is expected that M. Paulhan will be incapacitated from flying for at least a month.

A Long Flight by Bruneau de Laborie.

UNDETERRED by the strong breeze which was blowing, Bruneau de Laborie mounted his Henry Farman biplane at Etampes on the 25th ult. and flew over the neighbouring country for an hour and three quarters, during which he circled round the clock tower at Méreville.

Fatal Accident to Van Maasdyk.

ALTHOUGH Clement Van Maasdyk had not come into very great prominence, he had made some very fine performances in France on his Antoinette monoplane, and by his death at Arnheim on Saturday last this make of machine loses a pilot who it had been hoped would have become one of its most notable exponents. He was attempting a cross-country flight and had reached a height of over 150 ft. when apparently the motor stopped and he lost control, as the machine dropped to the ground, and the pilot was instantly killed.

The Bertin Aeroplane.

BEFORE a crowd of about 5,000 people Bertin, on Monday, at Courlis, near Houilles, succeeded in making a flight of 25 kiloms., during which he reached a height of 180 metres. Previously he made a flight of 15 kiloms. at a height of 100 metres. The machine was constructed by M. Bertin's father.

Five Passengers on a Breguet.

WITH the object of bettering his own record and setting up a new world's record, M. Breguet, on his biplane, succeeded in getting up from his flying ground at Lille, on Monday, with four passengers beside himself, the five persons weighing 370 kilogs., and the total load carried being 419.2 kilogs. After a short flight with his heavy load, he made a splendid landing.

Parisot Wins Deiardin Prize.

MOUNTED on his Henry Farman machine, Parisot, one of the latest pilots of that make, started on Saturday evening from Fismes,



Hoxsey, in the pilot's seat of his Wright biplane, in America, accompanied by Governor Fort.

about 24 kiloms. from Rheims, and after a 50-minute flight landed just by M. Dejardin's house, in the Parc aux Dames. This flight secures the prize of 5,000 francs offered by that French sportsman to the first aviator to land on his property.

Practice at Juvisy.

RIGAL, the one-time racing driver, has purchased a Sommer machine, and is making good progress at Juvisy. On Sunday week he covered one complete circuit of the course at a height of about 10 metres. During the same afternoon Didier was up for a quarter of an hour on his Henry Farman machine, and Ladougue, on the Goupy, flew for an hour at a height of 200 metres, while his pupil, Duhait, made a good trial lasting ten minutes. On the previous day Didier was out for a quarter of an hour, Ladougue for half an hour, Duhait for 8 minutes.

The Prize for French Makers.

THE regulations have just been issued in connection with the 10,000 frs. challenge trophy, offered by M. Deutsch de la Meurthe to French manufacturers. For this year the competition will open on September 1st and continue open till the end of October. The winner will be the manufacturer whose machine first flies with two persons on board from Issy to Orleans. During the trip an altitude of not less than 300 metres must be maintained above the earth, and the aviator and passenger must weigh at least 150 kilogs. This weight may be made up with ballast which must not be capable of being used. The maker of the aeroplane, the maker of the motor, and the pilot must be of French nationality, while the latter must also hold the A.C.F. *pilote aviateur* certificate. The altitude will be recorded by a registering barometer. The entrance fee has been fixed at 100 frs.

A New Aeroplane at Kiel.

A DR. TREISCHKE, of Kiel, has invented and constructed an aeroplane with which he has made some successful trial flights. On the 25th ult. he made three trips at heights varying between 10 and 20 metres.

Lake Geneva Traversed by Swiss Machine.

PERHAPS the greatest success so far of the Dufaux machines which was illustrated in our last issue, was the flight accomplished on Sunday last by M. Armand Dufaux. Starting from Noville, four miles south of Montreux, he reached Collogne, not far from Geneva, the distance of about 66 kiloms. being covered in 56 mins. 6 secs. The altitude maintained was about 150 metres. By this performance M. Dufaux won the Perrot-Duval prize of 5,000 francs.

A Baron Flies Across Copenhagen Sound.

AFTER several unsuccessful attempts, Baron Cederstrom succeeded, on the 24th ult., in crossing the Copenhagen Sound. Mounted on his Blériot machine he rose from the flying ground at Amager, by Copenhagen, and landed at Limhamnsetlet, close by Malmoe, in Sweden, the 30 kiloms. being traversed in 23 mins. He intended to fly back again, but thick fog which came on rendered it desirable to postpone the return trip.

An Austrian Biplane over Vienna.

EARLY in the morning of the 18th ult., before the festivities in connection with the Emperor's birthday had begun, Adolf Warchalowski, on a machine which he has designed as the result of his experience with the Henry Farman biplane, succeeded in flying from Wiener-Neustadt to the Austrian capital and back to his starting place. At twenty minutes past five, he rose from the aerodrome, and rapidly attained a height of 200 metres. Still rising, he headed for Vienna, and was soon over the Imperial castle at Laxenburg. Crossing the Danube, he made for the Cathedral of St. Stephen, and at 6.20 made a wide circle round it at a height of 700 metres, and then started off on the journey home, reaching Wiener-Neustadt safely at ten minutes to seven. During the hour and a half he had covered about 110 kiloms., this being the best cross-country flight so far made in Austria, completely eclipsing that made by Illner. The latter, although over a similar course, except that Illner did not fly over the city, was made in two stages. The Warchalowski machine was made at the Autoplan works, which, we understand, also builds the Pischoff monoplane.

An Italian Three Passenger Record.

ON Sunday last, at Pordenone, Cagno set up a new Italian passenger record by flying for some distance with three passengers on his biplane.

An Italian Cross-Country Flight.

IMPRESSED by the success of the Circuit de l'Est, a movement has been started in Italy to organise a race on similar lines in that

country next year. A sum of £2,000 has been offered by the Corriere della Sera to the Italian Aviation Society to form the nucleus of a prize fund.

Mars has a Lucky Escape.

WHILE flying across New York Bay from Coney Island to Staten Island on Saturday, the aviator Mars had a lucky escape. He was at a height of about 2,000 ft. when his motor stopped, and his Curtiss machine began to fall rapidly. He, however, righted the machine and planed down to the water, although he was unable to prevent the machine from striking the water at a high speed. The shock broke up the machine, but Mars himself was unhurt.

Bomb Guns for Aeroplanes.

FOR the purpose of making some tests in dropping bombs on to warships, at Garden City, N.Y., Mr. Clifford B. Harmon fitted a novel "gun" to his Farman biplane. It consisted of a steel tube placed vertically, the lower end being closed by a hinged door. An ingenious arrangement of mirrors shows the operator exactly when the tube is pointing directly to the object he wishes to strike, and by merely pressing a button the door is released, and the bomb drops to its mark.

✱ ✱ ✱ ✱

FLIGHT PIONEERS.

Full page Portraits which have appeared in "Flight."

FRAMED, this series makes an unique gallery of our flying men. Most copies can still be obtained from the Publishers, 44, St. Martin's Lane, W.C., for 1½d. each.

	1909.		1910.
S. F. CODY ...	Sept. 18	HIRAM S. MAXIM ...	Mar. 12
J. T. C. MOORE ...		CLAUDE GRANAME ...	
BRABAZON ...	Nov. 6	WHITE ...	April 30
HON. C. S. ROLLS ...	" 13	CECIL GRACE ...	July 9
FRANK MCCLEAN ...	Dec. 18	CAPT. BERTRAM DICK ...	
	1910.	SON ...	" 16
ROGER W. WALLACE ...	Jan. 1	HON. ALAN BOYLE ...	" 23
MORTIMER SINGER ...	" 15	J. ARMSTRONG DREXEL ...	" 30
LOUIS PAULHAN ...	" 22	LANCELOT D. GIBBS ...	Aug. 13
A. V. ROE ...	" 29	JAMES RADLEY ...	" 20
HENRY FARMAN ...	Feb. 12	JOHN B. MOISANT ...	" 27



Chas. F. Willard, in his Curtiss machine on which he carried in America, at Albany Park meeting, three passengers. Both he and his sister, Miss Emily T. Willard, are given as competitors at the Harvard aviation meeting.

CORRESPONDENCE.

*. The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents asking questions relating to articles which they have read in **FLIGHT**, would much facilitate our work of reference by giving the number of the letter.

NOTE.—Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.

RADLEY AND HIS MACHINE.

[720] In your issue of August 20th Mr. Massac Buist remarks that Mr. Radley "seems suddenly to have learned to fly." Would it not be more correct to state "Mr. Radley has suddenly obtained a machine worthy of his abilities"? For has he not been for some time in the front rank of monoplane flyers?

Because up to now he has had bad luck and bad engines, does that necessitate him being a bad flyer?

Bournemouth.

E. R. WHITEHOUSE.

CAPT. BERTRAM DICKSON AT LANARK.

[721] Feeling that the reference I was able to make a couple of weeks ago to the flying of Capt. Bertram Dickson, in the course of an article published by you, and which contrasted the Bournemouth and Lanark flight meetings, was perchance too brief, I crave the courtesy of your space to draw attention to the following facts: On the opening day of the Lanark meeting Capt. Dickson was the first man to fly, and he would doubtless have continued in the air till set of sun if he had not had the misfortune to break an inlet-valve at 7.5 p.m. On the Monday he was the first to fly the cross-country journey; then, owing to an error whereby, it now appears, his mechanicians put 6 stone more lead on his machine than he intended (of which mistake he was not aware at the time) in the weight-carrying competition round the course, the Farman biplane got smashed underneath while it was running over the ground on the far stretch and by contact with a ditch filled up with straw. The total load then aboard her was 37 stone. This untoward experience put him out of competition for the next two days, during which the weather proved perfect for the purposes of his rivals, but as soon as Capt. Dickson was ready for the fray again the weather, to quote his own phrase, "was vile," and continued fairly unfavourable till the close of the meeting, so that he never had an opportunity to do pretty exhibition flights or to compete in events which had been practically won during his enforced inactivity. All his efforts were therefore concentrated on the cross-country competition, which "needed a deal of watching."

H. MASSAC BUIST.

AERONAUTICAL TERMINOLOGY.

[722] Mr. Fred. T. Jane's letter in your issue of the 20th ult., and your own comments thereon are most interesting. But why (Oh why!) does Mr. Jane "not think much of *port* and *starboard*"? Surely he must know that starboard and right, port and left, are not at all synonymous. A buoy, for instance, may be on the "starboard hand," but it may equally well be on one's own left hand. Again, you say, "one speaks of an ardent yachtsman." In point of fact, "yachtsman" is a word which a yachtsman never (or hardly ever) uses. "An ardent yachtsman" is pure journalistic, nothing else. One may say of a man that he is a "smart helmsman," "a darned good sailorman," or "a something-or-other fine navigator," but one would never refer to him as a "yachtsman." In the same way, a real "yachtsman" would never invite you aboard his "yacht"; he might ask you to go a cruise in his "packet," his "craft," his "boat," or even in his "old hooker," but never in his "yacht." "Seaman" is never used in accounts of yacht races, in the sense of the man who runs the boat; in generally accepted yachting terminology one speaks of the "owner" (the man who foots the bills), the "helmsman" (the amateur at the helm), or the "skipper" (the professional at the helm); but never the "seaman."

Every single term employed in yachting or sailing terminology has a definite and unmistakable meaning. Although an adequate aeronautical terminology will certainly be evolved some day, there are heaps of ready-made terms to hand, which appear to have been neglected. For instance; why should an aeroplane "cant" when a boat "heels" or "drift" when a boat "makes leeway"?

Considering that flying, like sailing, is intimately connected with the wind, why is it that the wind is hardly ever referred to in the reports of flying meetings? A wind may be a "head," a "free," a "beam," or a "fair" wind; and surely its direction, character and force are of some interest in comparing the performances of various "planes" and the "airmen" who are "running" them. Surely

also, an aeroplane can "luff" and "bear away" like a boat; it can "stay" or "gybe" round a "mark" or pylon.

Another point, organising committees have taken great pains to draw up a "Code de Signaux" by combinations of shapes and colours. Why could they not have adopted the "International Code of Distant Signals" with which every seaman is acquainted? These signals are unmistakable combinations of four shapes; ball, cone and drum; with the numerical four values 1, 2, 3 and 4. The number of possible combinations is ample for any purpose and the great disadvantage of using various colours is done away with.

I think that on the questions of terminology, signalling and the rules of the road in space the experience accumulated during centuries afloat should not be despised. Obviously, naval or yachting experience will not prove all-sufficient for aeronautical purposes, but there is a good deal which could be taken as it stands; the remainder will evolve in due course as the special requirements of the air are better appreciated and understood.

JOHN W. WARD.

80-H.P. ENGINE WANTED.

[723] Many thanks for the insertion of my last epistle (710), may I correct a slight typographical error appearing therein? I had old Horace in mind as I wrote and his munificent patron Mécenas.

I should like to add that I have somewhat modified my plans and intend leaving the larger type until later as everything must be sacrificed to speed. The first to be constructed, therefore, will be a small racing machine, so that a 60-h.p. to 80-h.p. engine will now do it—under favourable wind conditions—I can get 80 m.p.h. out of it; and not a mile less will be of use if a British machine and aviator is to win the *Daily Mail* "Blue Ribbon," as I have it on the highest authority that two, at least, of M. Blériot's machines will be capable of doing from 80 to 85 m.p.h.; and there is no good in trusting to possible breakdowns with that firm: their organisation and generalship is too excellent. It is a huge task set us, but surely British ingenuity can do the trick. Here's one, at any rate, who will spend his last "fiver" in trying. But things would be so much easier if only our delightful Government would come out of its shell and give manufacturers of engines a little real encouragement by offering to purchase a goodly number of a reliable light speed engine fulfilling certain previously stated requirements.

Walbrook.

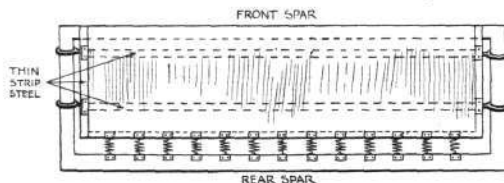
W. F. C. STEUART-SETON.

SELF-CAMBERING PLANES.

[724] The article on "Flyers and Yachts," recently completed in **FLIGHT**, has reminded me of an idea I thought of some time ago, which may interest some of your readers.

Briefly, the idea is to have, instead of a fixed-cambered aerofoil, a frame in which the fabric is held taut by springs similar to the ailerons on the Short biplanes. I must admit that this idea possesses many disadvantages, but several good advantages appear to me as I write, and among them are the following:—

- (1) Large angle of incidence on starting off, which will diminish after leaving the ground, thus allowing starting off at low flying speeds.
- (2) By fixing suitable control wires the angle of incidence could be adjusted during flight, thus allowing a variable flight speed.
- (3) The angle of incidence of either wing (in a monoplane) could



be varied separately, thus doing away with wing-warpage or the use of separate ailerons.

I should also imagine that a plane of this description would, whilst flying, assume a more perfect camber than a fixed one which relies on the relative position of the tail for its flying angle.

I enclose a sketch, which may serve to illustrate my meaning, and should be very glad if other readers would give me their opinions as to its practicability.

In closing I should like to express my appreciation of your very valuable paper.

Carlisle.

E. TEMPLE ROBINS.

ROTARY ENGINES.

[725] We have seen in your paper *FLIGHT* a photograph and description of a so-called new rotary engine, constructed by Mr. C. A. Fletcher, which he states "seems to have in its construction and working, all the claims of the 'Dreadnought' engine, advertised in your paper this week."

This engine, although differing in many points, as to the method of separating the petrol gas mixture from the lubricating oil, compared with that used with the "Dreadnought" rotary engine, at the same time, in all probability, goes sufficiently near to infringe the "Dreadnought" rotary engine patents, and thus unless Mr. Fletcher holds a patent of a prior date, thereby permitting him legally to employ this patent principle, it would seem that he is butting his head against a stone wall—or against the "Dreadnought" rotary engine patents, and thus any profits arising from his engine must necessarily accrue to the "Dreadnought" Rotary Engine Syndicate, as owners of the original patents.

The Syndicate, however, desires to encourage all inventors of aerial engines (even though they unfortunately should have parallel ideas to theirs), and if this engine gives anything like the results the inventor claims, a manufacturing "entente" and Royalty basis could doubtless be arranged, on amicable terms, between both parties.

From the photograph published, we fear that the inventor's sanguine anticipations may not be realised, as rotary engines need to be built on certain practical lines—the chief of which is compactness—for the sake of safety.

This engine, from the photograph, seems to be about 4 ft. 6 ins. in diameter, and it would appear to us that such diameter is absurd and that cylinders of that particular form would be very difficult to construct, and to turn on a lathe, so that a proper balance and fly-wheel effect would be most hard to obtain, whereby uneven running is to be feared, as well as other dangers to which large diameter rotary engines are liable.

The inventor will also find, we think, that auxiliary exhausts in the cylinder walls are unsuited for rotary engines.

In brief, we may say, to compare this rotary engine with the compact "Dreadnought" rotary engine is absurd.

On one point however doubtless this photograph of the new engine has done good, namely, in proving to your readers that a rotary engine in which the petrol gas and the lubricating oil can be separated is a possibility.

In this respect, by one letter, our competitor has done more than we have, by our many pages of advertisements, and for that reason we are prepared to try to help him to perfect his engine, which as it stands at present, we fear, is not a commercial proposition.

THE "DREADNOUGHT" ROTARY ENGINE SYNDICATE.

SPEED ALARMS AND THE WIND.

[726] Having read with great interest the specifications of the three devices for measuring the speed of an aeroplane, it seems to me that all three have one great drawback, viz., that not one of them registers the true speed of the machine. Assuming that the devices have been "tuned up" to give sounds relative to certain true speeds while the machine is in still air, let us now consider two cases:—

1. Speed of wind, nil.
Speed of aeroplane in still air 40 m.p.h. "Whistle" will register note corresponding to 40 m.p.h.
2. Speed of wind, 20 m.p.h., opposing aeroplane.
Speed of aeroplane in still air = 40 m.p.h.,
∴ true speed of aeroplane = 40 - 20 m.p.h. = 20 m.p.h.
But relative speed of aeroplane and wind = 40 m.p.h.,
∴ "whistle" will still register 40 m.p.h., when speed is only 20 m.p.h.

Therefore, it seems to me that unless the aviator can by some means find out the speed of the wind, and also the angle between direction of wind and direction of aeroplane, the devices are of very little practical value. As anemometers are not to be found at every ½ mile across country, how is our aviator to gauge wind speed? Crew.

A. W. BRUCE-JOY.

[Flight is relative to the wind in every respect, save that of accomplishing a journey between two points on earth, and questions of safety are essentially related to the relative wind and have nothing to do with the speed over the earth. It is the speed through the wind that these alarms are intended to indicate.—ED.]

AN 120-150-H.P. ENGINE WANTED.

[727] I notice in your correspondence column (letter No. 710) an inquiry by Mr. W. F. C. Stuart-Seton for a reliable British aerial engine, to weigh under 400 lbs., and to develop at least 160 h.p.

He also asks whether the "mysterious 'Dreadnought' people" are sufficiently enterprising to produce such an engine for him.

I may say that this has already been done, and that the "Dreadnought" Rotary Engine Syndicate are prepared to put on the

market shortly an 18-cyl. rotary engine weighing 360 lbs.; and developing a guaranteed 160-h.p. at under 1,000 revs.

This is undoubtedly the lightest and most powerful aerial engine that has ever been produced.

This 18-cyl. "Dreadnought" engine will be listed at £1,200, and may be obtained on the hire-purchase system.

JAMES BETT

(Proprietor of the "Dreadnought" Rotary Engine Syndicate).

SUGGESTIONS FOR PRIZES.

[728] Your correspondent, H. H. (653, *FLIGHT*, No. 83), suggests a prize for flights by aeroplanes using the smallest engine-power.

Perhaps it will interest some of your readers to know that one identical to the above was suggested by the well-known aviator, A. V. Roe (and flight pioneer, with his 9-h.p. motor), as far back as June, 1909, in your correspondence columns.

He also suggested, amongst others, prizes for the undermentioned, if I may repeat them:—Lightest aeroplane, smallest span, fastest aeroplane, slowest aeroplane, most portable, aeroplane with greatest range of speed, fast or slow.

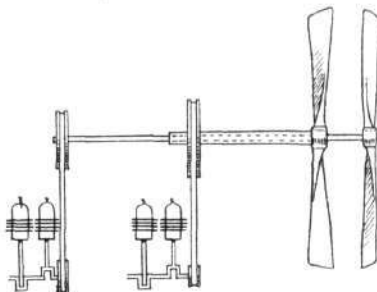
Lowestoft.

LEWIS E. RICHARDS.

DUPLICATE ENGINES AND SCREWS FOR AEROPLANES.

[729] The application of duplicate engines and propellers to aeroplanes seems to be of vital importance, as so many accidents have occurred owing to failure of motor power. I enclose a rough sketch of what I think the best solution of the problem.

A right- and a left-hand screw are mounted on concentric shafts, each driven by a separate motor through a chain-and-ratchet drive. The ratchet is necessary, as in case of failure of one motor its pro-



PELLER will revolve freely, and thus not interfere with the steering of the aeroplane. With one engine only working the aviator would be able to make for the nearest safe land. The pitch of the back propeller would, of course, be coarser than the front one, and, being driven by an independent engine, would be equally efficient. With the propellers thus arranged, the thrust with either one or both engines working would always be in the same line.

Oxford.

T. J. BENNETT.

THE GNOME ENGINE.

[730] In your able article on the technicalities of the Bourne-mouth meeting, appearing in your issue of July 23rd, you make a proposal to brighten the cylinders of the Gnome engine so that colour changes may afford an indication of the temperature within. You, however, mentioned that this engine is apt to get hot, particularly so when not quite clean. As polished surfaces radiate heat more slowly than those left dull, it is possible that the writer's proposal might lead to trouble.

Farnborough.

V. H. P. DAMAN.

[Our correspondent puts forward a very logical argument in favour of leaving radiating surfaces dull, and we agree that where two cylinders are known to be equally clean, that which is dull on the outside will probably keep cooler than that which is bright. We happen to know of a case in which the Gnome engine is kept in the manner that we describe, however, and we believe that it has given entire satisfaction. Our object in making the reference, however, was not so much to advocate brightness *per se* as to emphasise the desirability of extreme cleanliness, even to the extent of brightness outside as well as in. A mechanic in charge of an engine would not easily be able to justify the presence of dirt of any sort if his instructions were that the cylinders were to be bright. We do not think that the margin of cooling in the Gnome engine is likely to be so fine cut as to depend for its adequacy on a dull surface, otherwise we imagine that the manufacturers would have provided for a permanently dull surface in the first instance.—ED.]

MODELS.

CAMBER FOR MODELS.

[731] I have constructed several monoplanes and biplanes, with as yet but poor success, I admit, but I intend now to construct a Farman biplane on principles more scientific than before. Hence arises the difficult question of obtaining correct camber. Could any other readers of FLIGHT inform me of the best and easiest way of obtaining correct camber. My difficulty is to get the ribs of the planes curved, and of keeping them in that position. Would $\frac{1}{8}$ in. angle of incidence be too great or too small for a model Farman biplane $\frac{1}{16}$ th actual size? I have also the same difficulty in fixing one plane above the other in a satisfactory way as Mr. H. Henderson has, in letter No. 632, so I am afraid I cannot offer any proposal on the subject.

Sherborne.

A. G. ADAMS.

MODEL MONOPLANE POWER.

[732] Could any of your readers inform me through FLIGHT what size tractor-screw I should require, and also how many strands of $\frac{1}{16}$ in. elastic, for a model monoplane. The dimensions are 3 ft. long and 3 ft. wide, weight 6 ozs., exclusive of screw.

Kensal Rise.

M. KEARLEY.

LOADING OF MODELS.

[733] I have been reading different papers lately and have found different opinions as to the amount of weight that can be supported by 1 sq. ft. of area. I am going to make a model aeroplane with an elastic motor, and should be glad to know what weight can be lifted by 1 sq. ft. of area.

Caterham Valley.

R. D. THOMPSON.

[We shall be pleased to publish a list of the loading values and speeds of any successful flying models that our readers send us.—ED.]

SOME QUERIES.

- [734] (1) What are the cylindrical objects on Curtiss' biplane marked with an arrow in enclosed photo?
- (2) What will best prevent a model Blériot monoplane from capsizing "head over heels" as soon as launched?
- (3) Should the model have any dihedral angle on the main planes? Southport.

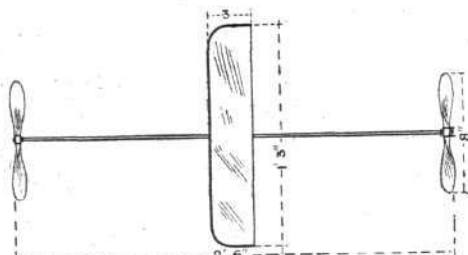
S. R. ELLIOTT.

- [1. Curtiss, in our frontispiece of August 10th, the photo referred to, is shown in flight over the sea. The cylinders are floats.
2. Altering the position of the centre of gravity by a shifting weight.
3. Not if it is supposed to represent a Blériot.—ED.]

MODEL CONSTRUCTION.

[735] I have been watching with interest the successes of C. Griffiths Ridley's plane. Would he kindly send me the details of his machine, for which I should be very much obliged.

In answer to R. G. Pinnock's letter asking for a beginner's model, the following is a very simple model.



The main stick is $\frac{1}{4}$ in. square whitewood, and the rear of the plane is loose. I use plenty of rubber (12 yds.). This model has flown 40 yds., and can be made to fly like a helicopter, vertically.

Leeds.

F. N. H.



RECORDS.

Distance and Duration.—Olieslaegers (Belgium), at Rheims, on a Blériot monoplane with Gnome engine: 244'309 miles in 5h. 3m. 5 $\frac{1}{2}$ s.

Speed.—J. Radley (Great Britain), at Lanark, on a Blériot monoplane with Gnome engine: 1 mile in 47 $\frac{1}{2}$ secs. = 75'95 m.p.h.

Altitude.—J. A. Drexel (Great Britain), at Lanark, on a Blériot monoplane fitted with Gnome motor: 6,750 feet in 52 mins.

Aeronautical Patents Published.

Applied for in 1909.

Published September 1st, 1910.

- | | | |
|---------|-----------------------------|--|
| 11,090. | GEOGHEGAN and MOORE-IRVINE. | Apparatus for aerial navigation. |
| 18,116. | DE HAZEL. | Airships. |
| 18,375. | VON MACH. | Process for protecting balloons against fire. |
| 18,384. | F. W. LANCHESTER. | Aligning mechanism for flying machines. |
| 18,651. | A. GLENN. | Maintaining the balance of vessels in the air. |

Applied for in 1910.

Published September 1st, 1910.

- | | | |
|---------|-----------------------------|---|
| 1,318. | J. MASSOHN. | Airships of the rigid type. |
| 5,836. | P. A. L. GROSCLAUDE. | Dirigible balloons. |
| 6,605. | SHORT, SHORT and SHORT. | Valves for gas containers employed in balloons or airships. |
| 11,754. | GEOGHEGAN and MOORE-IRVINE. | Apparatus for aerial navigation. |

DIARY OF FORTHCOMING EVENTS.

British Events.

1910.
Sept. 19-17 Burton.

1910.
Sept. 14-16 Folkestone.

Foreign Events.

1910.
Sept. 11-18 Bordeaux.*
Sept. 24-Oct. 3 Milan.*
Sept. 25-Oct. 3 Biarritz.
Oct. 17-25 St. Louis. Gordon-Bennett Balloon Race.

1910.
Oct. 29 New York. Gordon-Bennett Aviation Cup.
Oct. 15-Nov. 2 Paris Aero Show.
Dec. 4-18 Marseilles.

* International.

BACK NUMBERS OF "FLIGHT."

SEVERAL back numbers are now very scarce, and have been raised in price as follows:—

No.	Date	Contents	s.	d.
No. 2,	Jan. 9,	containing Table of Propellers ...	1	6
6,	Feb. 6,	" "How Men Fly" ...	0	6
8,	" 20,	" Aeronautical Bibliography. Wright Bros.' Elevator Patents. Flying Ground at Farnbridge Illustrated Glossary.	1	0
10,	Mar. 6,	" Human Side of Flying Aero Club Ground at Shellbeach. Military Aeronautics.	1	0
12,	" 20,	" Souvenir Supplement ...	1	6
15,	Apr. 10,	" Engines at Olympia ...	1	0
16,	" 17,	" Prize List ...	3	6
31,	July 31	" Models at Olympia. Blériot Flyer ... (Full page drawing.)	2	0

Other back numbers (excepting Nos. 3 and 4, which are out of print), post free, 1 $\frac{1}{2}$ d. each, including descriptions and scale drawings of the Voisin (Nos. 33 and 34), Curtiss (No. 27), Cody (No. 34), Farman (No. 42), and Wright (No. 63) biplanes, the Santos Dumont (Nos. 40 and 41), Antoinette (Nos. 43 and 44), and Grade (No. 50) monoplanes, and of a full-size Wright glider (Nos. 38 and 39).

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